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ICONES PLANTARUM INDIÆ ORIENTALIS

OR

PLATES AND DESCRIPTIONS OF NEW AND RARE PLANTS

FROM SOUTHERN INDIA AND CEYLON

BY

LT.-COL. R. H. BEDDOME

CONSERVATOR OF FORESTS, MADRAS

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300 PLATES

PLATES 101-200

MADRAS: GANTZ BROTHERS

LONDON: J. VAN VOORST

1874

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ANONACEÆ.

MITREPHORA GRANDIFLORA. (Bedd.) A large tree, young parts minutely aureo-pubescent, leaves ovate lanceolate, or elliptic with a short blunt acumination, thinly coriaceous glabrous and shining above, glabrescent beneath, with hairy glands in the axils of the veins, 4-5 inches long by 1½ to 2½ broad, petioles about ½ an inch long, peduncles leaf opposed furnished with a bract below each flower 2-3 flowered shorter than the petioles, flowers subsessile, bud globose densely aureo-pubescent, exterior petals 1 to 1¼ inches long, by ⅝ to ⅞ of an inch broad densely adpressedly velutinous on the outside, subglabrous within, pure white turning to yellow, interior petals ⅝ to ⅝ of an inch long triangular at the apex with a long broad claw, very hairy at the apex, glabrous below, white beautifully streaked with carmine, forming a mitreform cap over the genitalia, early deciduous, stamens and ovaries indefinite as in the genus, ovules 4-6 in 2 series, young carpels densely velvetty, mature about the size of a hazel nut globose and 1 seeded, or oblong and 2 seeded fuscous with dense short tomentum, and furnished with a raised furrow down the whole length.

This very handsome tree was lately discovered on the S. Canara ghats near Coloor and Gairsoppah at an elevation of about 2000 feet, when in full flower it is a very handsome object and its large flowers give it at the distance more the appearance of a Magnoliaceous than an Anonaceous tree, the 3 inner petals or mitreform cap which are beautifully streaked with carmine are early deciduous, but the 3 outer petals subsequently increase in size and turn from pure white to yellow; the timber is very tough.

PLATE No. CI.

CELASTRACEÆ.

GLYPTOPETALUM GRANDIFLORUM. (Bedd.) A large shrub, leaves opposite or rarely alternate, glabrous and shining elliptic to oblong with a short rather sudden acumination 3 to 7 inches long by 1-3½ broad, quite entire or distantly and obscurely toothed in the upper portion, petioles 2-3 lines long, cymes supra-axillary as long or rather longer than the leaves three flowered at the apex, pedicels divaricate 1-1½ inches long, flowers bright yellow about 1 inch across, tetramerous, sepals imbricate, petals oblong patent slightly reflexed not foveolate, stamens 4 inserted on to the disk, ovary immersed in the disk 4 celled, ovules solitary pendulous from the apex of the axis.

In the Wynad in moist woods at Devala, elevation 2,000-2,800 feet.

PLATE No. CII.

SAPINDACEÆ.

NEPHELIUM STIPULACEUM. (Bedd.) A middling sized tree, leaves glabrous abruptly pinnate 6-14 inches long leaflets 2-3 pair opposite or subopposite, the lowest pair quite at the base of the common petiole very small obliquely curved and stipuliform, others oblong obtusely acuminate slightly attenuated and oblique at the base glabrous on both sides pale beneath 3-6 inches long by 2-3 broad, panicles axillary and terminal slightly pilose, a little shorter than the leaves, flowers polygamo-dioecious apetalous, stamens 5-9 slightly exserted, ovary 2 lobed 2 celled, style 2 parted, lobes recurved, fruit oval the size of a large gooseberry densely covered with weak prickles, seed oblong half covered with the succulent aril, testa brown, cotyledons very large fleshy. *Bedd. in Linn. Trans. Vol. XXV.*

Anamallays and Wynad in moist woods at an elevation of about 2,000 feet.

PLATE No. CIII.

MELIACEÆ.

LANSIUM ANAMALLAYANUM. (Bedd.) A good sized tree, leaves 6-9 inches long unequally pinnate glabrous, leaflets 3-5 elliptic obtusely acuminate attenuated at the base entire, 3-4½ inches long by 1½-2 broad furnished with hairy glands in the axils of the viens beneath, petioles about ½ an inch long, flowers in axillary panicled spikes, peduncle very short 1-2 lines long, spiked pedicels 2-3 inches long, flowers pentamerous hermathrodite sepals imbricate rounded ciliate with 1-2 minute bracts at the base, petals about twice as large imbricate, rounded at the apex, stamen-tube obsoletely 5 cleft, anthers 10 alternately shorter, the 5 longer ones just appearing above the apex of the tube filaments quite coherent with the tube and not separable with the anther, ovary strigose sessile 3 lobed 3 celled, cells 2 ovuled, style very short thick, stigma obtusely 3 lobed, fruit oblong very succulent size of a large grape 2 celled 2 seeded, seed arillate, embryo peritropal radicle pubescent. *Bedd. in Linn. Trans. Vol. XXV.*

Common in the moist woods on the Anamallays and in the Wynad at an elevation of about 2,000 feet.

PLATE No. CIV.

LEGUMINOSÆ.

CROTALARIA LANATA. (Bedd.) A large shrub 12-15 feet high, stems angled very woolly above, leaves oblong oval or suborbicular mucronate 4-6 inches long by 3-3½ broad, glabrous above densely woolly beneath, petioles ½-1 inch long woolly, stipules very large transversely lunate apiculate, racemes terminal bracts hairy ovate apiculate calyx pubescent, flowers large yellow, legume glabrous many seeded.

Anamallays and Pulnies, grass land and dry forest, 3-4,000 feet elevation.

PLATE No. CV.

CROTALARIA ELEGANS. (Bedd.) Herbaceous erect glabrous, leaves narrow linear 4-6 inches long by 2-3 lines broad, mucronate, petioles 1 line long slightly hairy (under the lens) as is the costa on the under side of the leaves, stipules minute early caducous, racemes terminal and from the upper axils slender many flowered, bracts large ovate apiculate adnate and decurrent to the rachis of the raceme, flower pedicels about ½ an inch long increasing to one inch when in fruit, legume sparingly hairy (under the lens) many seeded.

Anamallays and Pulnies, grassy places about 4,000 feet elevation ; a very pretty species.

PLATE No. CVI.

BAUHINIA BENTHAMI. (Bedd.) A gigantic climber, the young branches inflorescence and legumes fuscous with minute reddish tomentum otherwise glabrous leaves broadly oblong to suborbicular 7-9 nerved 3-5 inches long and nearly as broad divided down ⅓th-¼rd into 2 obtuse lobes, above glabrous, beneath minutely hairy (under the lens) racemes leaf opposed supra-axillary or terminal, few flowered, flowers pedicellate bright crimson about 2½ inches each way, calyx with a long tube below and 5 imbricate closed segments above, 5 angled in bud at length splitting in the upper portion into 5 equal narrow lanceolate segments or into 2 divisions of 2-3 each, petals 5 very long clawed, nearly twice the length of the calyx segments, stamens 5 free all fertile and of equal length inserted into the hairy apex of the calyx tube, anthers versatile, ovary stalked about 5 ovuled, stalk below adhering to the inside of the calyx tube, legume about 6 inches long and 1½ broad obliquely lanceolate with a long fine point, seminiferous suture flat and slightly winged about 5 seeded.

A most gorgeous creeper, very common about the Wynad and South Canara ghats, from the foot up to about 1,500 or 2,000 feet elevation ; it climbs to the top of the highest trees.

PLATE No. CVII.

HUMBOLDTIA UNIJUGA. (Bedd.) A tree, young parts minutely strigose otherwise glabrous, leaves alternate abruptly pinnate, common petioles about 2 lines long, leaflets only one pair with a flat depressed gland at their insertion on the apex of the petioles, subsessile narrow lanceolate very unequal at the base, and with a long acumination at the apex 5-7 inches long 1¼ to 2 broad stipules semi-ovate acuminate very unequal sided ½ to ¼ inch long, flowers crimson on very short racemes from the trunk and older boughs and more rarely from the younger branchlets, peduncles ½–1 inch long pedicels slender ½ to 1 inch long furnished with 2 oblong minutely pubescent bracts at the apex just below the calyx, calyx with a short tube 5 parted, segments oblong more than twice as long as the bractes minutely pubescent, corol 5 parted, one half longer than the calyx lobes, broad oblong, stamens 5 all fertile inserted alternate with the petals on to the hairy apex of the calyx tube, filaments glabrous except at their base, staminodia none, ovary stipitate hairy 2-3 ovuled, stipe adnate to the wall of the calyx tube, legume unknown.

A tolerably large tree, abundant on the Travancore hills just below Aghusteer peak, at 3-4,000 feet elevation.

PLATE No. CVIII.

ROSACEÆ.

PARINARIUM INDICUM. (Bedd.) A middling sized tree, glabrous except the inflorescence, leaves alternate elliptic to lanceolate entire glabrous slightly undulate, 8-9 inches long by 3 broad, with 2 glands at the base on the under side close above the petiole ¼ to ½ inch long, racemes slightly pubescent, shorter than the leaves leaf opposed or terminal, flowers white subsessile 3 bracteated, outer bract large ovato-lanceolate, 2 inner ones linear lanceolate, calyx tube infundibuliform, divisions 5 imbricate lanceolate acuminate subequal pilose, petals 5 inserted into the jaws of the calyx between its divisions and the stamen tube and alternate with the former ovate pointed imbricate equal, a little shorter than the calycine lobes, stamen tube lining the inside of the calyx and connate with it to its base densely hairy inside, stamens 12-15 all together on one side of the tube near the ovary, filaments glabrous twice the length of the calyx induplicate in æstivation, anthers 2 celled bursting longitudinally, the rest of the stamen tube is furnished with teeth

along its margin (staminodia ?) ovary connate with the tube near the summit very hairy 2 celled, cells 1 ovuled, ovule erect, style lateral or almost basal glabrous except at the base longer than the stamens. Entosiphon Indicus, *Bedd. in Mad. L . Soc. Jour.*

Wynad, in moist woods at an elevation of 2,000-3,000 feet, common on the Carcoor ghat.

PLATE No. CIX.

BEGONIACEÆ.

BEGONIA MINIMA. (Bedd.) A very small plant about 4 inches high, leaves radical rhomboid ovate to cordate or slightly trilobate acuminate, bristly crenate, long petioled, furnished above with a few weak hairs, beneath glabrous, pellucid dotted, 1½ to 2 inches long, 1-1⅔ broad, petioles 1-2 inches long, scapes dichotomously branched longer than the leaves, with 1 leaf near the base, branches several flowered, bracteated, male perianth 4 petaled, 2 inner petals narrower than the outer, stamens definite about 8, female perianth 5 petaled, capsule 3 winged, placentas double.

Wynad, on rocks in moist woods near Devallicottah, elevation 2,500-3,000 feet ; it belongs to Dr. Lindley's section Diploclinium.

PLATE No. CX.

BEGONIA FLOCCIFERA. (Bedd.) Stemless with large scariose very membranaceous bracts at the apex of the root leaves densely covered with woolly tomentum on both sides when young, at length nearly glabrous above, obliquely semi-cordate to sub-orbicular (not peltate) variously sinuate but not lobed, generally broader than long, 3 inches long by 4 broad, but very variable in size and shape, petioles about 2-2½ inches long very woolly, scapes very long branched, with the branches again dichotomously branched and supradecompound, flowers very numerous, male perianth 2 petaled, petals nearly orbicular, stamens indefinite, female perianth 4 petaled, petals lanceolate acute, placentas single.

Travancore and South Tinnevelly hills, at an elevation of 3,000 feet.

PLATE No. CXI.

CYPRIPEDIUM DRURII. (Bedd.) Rhizome shortly creeping with thick succulent fibres, leaves radical narrow oblong thick coriaceous slightly unequal at the apex, 8-12 inches long by about 1½ broad, scape 7-10 inches long pubescent, bearing a single large yellowish flower streaked and blotched with reddish purple, with a sheathing bract at the base, upper sepals 1½ or a little more long and about 1 inch broad acuminate pubescent on the ontside, lower ones united in a single broadly ovate sepal, petals narrow oblong nearly 2 inches long by about ½ an inch broad slightly hairy at the base, labellum broadly inflated about 1½ inch long.

Travancore hills at 5,000-6,000 feet elevation, first discovered by Colonel H. Drury on the Aghusteer hill, and I afterwards found it very abundant on the top of the Calcad hills, in flower in January.

PLATE No. CXII.

MYRSINACEÆ.

ARDISIA SERRATIFOLIA. (Bedd.) An erect shrub, young branches under side of the leaves and petioles densely rufo-tomentose, leaves nearly glabrous above, narrow lanceolate attenuated at the base and with a long acumination at the apex, very sharply serrated serratures quite at right angles with the margin of the leaf, lateral veins numerous diverging from the midrib very prominent beneath, 6-9 inches long by 1¼-2½ broad, petioles ¼ to ½ inch long, peduncles axillary about 2 lines long several flowered, pedicels slender about ½ inch long glabrous, calyx pubescent, petals gland dotted, style long slender.

Anamallays, in moist woods up to 3,000 feet, Coimbatore hills at similar elevations.

PLATE No. CXIII.

RHAMNACEÆ.

ZIZYPHUS WYNADENSIS. (Bedd.) A lofty tree, unarmed, young shoots and inflorescence fulvo-tomentose, leaves elliptic lanceolate glabrous and shining above beneath very finely reticulated and slightly hairy on the veins furnished with hairy glands in the axils of the main veins, 1½ to nearly 2 inches long, ¾ to ⅞ of an inch broad, petioles a little less than ¼ inch long, flowers in dense axillary fascicles about the length of the petioles, sepals furnished with a prominent ridge down their inner face, petals 3 lobed, connective of the anthers prolonged into a long blunt point, ovary 2 celled immersed in the hairy pentagonal disk, styles 2 diverging.

Wynad, in dense forests about Devalicottah, elevation 3,000 feet.

PLATE No. CXIV.

STYRACEÆ.

SYMPLOCOS ROSEA. (Bedd.) A large shrub, with small rose colored flowers, young branches petioles and inflorescence hairy, leaves elliptic oblong to lanceolate, slightly attenuated at the base and furnished with a longish sharp acumination, very finely but sharply serrated except at the base, glabrous above, glabrescent beneath or furnished with a few hairs on the costa and veins, 5-6 inches long by 1½ to 2½ broad, petioles about 4 lines long, racemes axillary 1-3 inches long very hairy as are the deciduous bracts and the calyx, calyx-lobes acute about ½ as long as the corol, corol lobes obtuse glabrous, ovary 3 celled, cells 2 ovuled, ovules pendulous, fruit oblong about ½ an inch long, puberulous. *Bedd. in Linn. Trans. Vol. XXV.*

Anamallays, moist woods, 2,000 to 4,000 feet elevation.

PLATE No. CXV.

SYMPLOCOS ANAMALLAYANA. (Bedd.) A small tree, every where glabrous, leaves ovate to sub-orbicular with a short obtuse point very coriaceous shining, serrulate in the upper half, 1½ to 1¾ inches long by about 1 inch broad, petioles about 1 line long, peduncles simple axillary solitary or 2-3 together about 1 inch long furnished with 2 bractes at the base of the calyx, flowers small white, calyx lobes acute about ⅓rd the length of the corol, corol lobes rounded, ovary 3 celled, with 2 pendulous ovules in each cell, fruit narrow oblong ½ to ¾ inch long. Symplocos uniflora, *Bedd. in Linn. Trans. Vol. XXV.* (not Benth.)

Anamallays, 5,000—6,000 feet elevation.

PLATE No. CXVI.

SYMPLOCOS ACUMINATA. (Bedd.) A small tree or large shrub, young shoots peduncles and bracts minutely hairy otherwise quite glabrous, leaves elliptic lanceolate attentuated at the base and furnished with a very long acuminated point subentire or with a few very inconspicuous distant teeth in the upper half, about 4 inches long by 1½-1¾ broad racemes slender axillary or supra-axillary slightly hairy as are the bracts 1-2 inches long, bearing several pedicelled white flowers, calyx lobes rounded or subacute, ½ shorter than the corol, flowers ½ an inch in diameter, corol-lobes obtuse, ovary 3 celled with 2 pendulous ovules in each cell.

Wynad, very common on the top of the Brumagherries, elevation 5000 feet, also on the Tirrioot peak at a similar elevation.

PLATE No. CXVII.

GENTIANACEÆ.

EXACUM TRAVANCORICUM. (Bedd.) A small much branched glabrous perennial about 6-8 inches high, stems numerous terete, leaves sessile spathulate incurved, and slightly acute at the apex very thick and fleshy, convex on the under surface 3 veined, (veins quite obscure) 1-1¼ inches long by about ½ an inch broad, peduncles axillary solitary about 2 inches long each bearing a single large light blue flower, each flower being 1-1½ inches in diameter, calyx winged on the angles, lobes 4 with very long acute points about ½ as long as corol, corol lobes rounded.

Travancore hills, abundant on the Attraymallay in grassy places and on rocks at an elevation of 5000 feet ; a most lovely plant of which the drawing only shows 1 branch; it forms a dense globular plant, covered with sometimes nearly 50 beautiful cobault colored flowers.

PLATE No. CXVIII.

EXACUM ATROPURPUREUM. (Bedd.) A glabrous erect plant, annual ? stems terete, leaves sessile and stem clasping from broadly ovate to suborbicular with a sharpish acumination 3-5 nerved 1½-2 inches long by 1½ broad, flowers on solitary axillary peduncles which are about the length of the leaves, calyx very much winged on the angles, lobes 5 apiculate less than ½ the length of the corol, flowers about 2 inches in diameter, of a very deep blue, corol lobes slightly acute, capsule oblong.

PLATE No. CXIX.

CYRTANDRACEÆ.

DIDYMOCARPUS REPENS. (Bedd.) A creeping plant, everywhere covered with much silvery pubescence, stems rooting at intervals along their whole length, leaves long petioled broadly cordate or orbicular with a very cordate base and slightly pointed at the apex, coarsely crenated with the crenatures again serrated, covered on both sides with numerous silvery hairs of different lengths, the longer ones being jointed, 4-5 inches each way, petioles about 4 inches long very hairy, peduncles rather larger than the petioles, few flowered at the apex, flowers blue, calyx lobes acute about ¼ the length of the corol, corol tube ½ to ¾ inch long recurved, lobes small obtuse and scarcely spreading, filaments of the fertile stamens broadly dilated except at the apex, sterile filaments shorter slightly clavate at the apex.

In moist woods in the South Tinnevelly and Travancore forests, 1,000-3,000 feet elevation, very abundant in the Ayen Coil pass, nearly allied to D. Zeylanica R. Br. a Ceylon plant.

PLATE No. CXX.

EBENACEÆ.

DIOSPYROS SYLVATICA. (Roxb.) A middling sized tree, glabrous except the inflorescence which as well as the young parts is generally minutely puberulous leaves (turning black in drying) elliptic-oblong acuminate at the apex and attenuated at the base 4-5 inches long by 1¼-2 broad, petioles 2-3 lines long, male peduncles about as long as the petiole with a caducous bract at the base, 6-10 flowered, pedicels very short, calyx and corol 3-4 lobed the latter 2-3 times as long as the former, anthers 13-22, filament seated on the globose torus single and double mixed, no rudiment of an ovary ; female flowers solitary on short peduncles, much larger than the male with an ample calyx, sterile stamens 4 inserted on the corol, styles 3-4, ovary 6-8 celled, fruit spherical 8 lines in diameter, seed oblong 6 lines long, 4 lines broad, albumen ruminate. *Roxb. Fl. Ind.* ii. 537 ;— *DC. Prod.* viii. 231 ;—*Thw. En. Pl. Zey. p.* 178.

Common in many of our Western Coast forests up to about 3,000 feet, also in the forests of the Northern division and in Ceylon, called Tella-goda in Teligoo, flowers in the hot weather.

PLATE No. CXXI.

DIOSPYROS TOPOSIA. (Ham.) A middling sized tree, glabrous, leaves coriaceous, elliptic lanceolate attenuated at both ends 4-5 inches long by 1½-2 broad, very closely and prominently reticulated (when dry) petioles nearly ½ an inch long, male inflorescence in 3 flowered cymes on peduncles ¾ inch long on the lower leafless portions of the branchlets or in the axils of the lower leaves, calyx rough but not hairy quite entire when young at length splitting irregularly at the apex, lobes acute unequal, corol hairy on the outside 4 lobed at the apex, stamens 20-30 in pairs of unequal length inserted on to the torus, female flowers solitary, stamens 12-16, stigmas 4, ovary 4-6 celled, fruit spherical size of a very large strawberry glabrous but rough.

Tinnevelly hills in damp forests 3-4,000 feet (called Toveray) Ceylon, (called Kahakaala) Silhet mountains. I have never met with the female tree ; the specimen figured is from Tinnevelly, but the dissections of the female flower are from drawings executed in the Peradenia Herbarium in Ceylon.

PLATE No. CXXII.

DIOSPYROS CALYCINA. (Bedd.) A good sized tree, everywhere glabrous, leaves dark shining green narrow lanceolate attenuated at the base, tapering at the apex into a very blunt point, about 3-3½ inches long by a little less than 1 inch broad, petioles about ¼ inch long, male cymes about half the length of the leaves 3-9 flowered, calyx small 4 toothed, corol urceolate very gibbous at the base 4 lobed at the apex, bright yellow in color, stamens 6 or 8, each with 2 anthers of equal length, inserted on the disk surrounding the large rudimentary ovary, apex of the anthers inflexed and meeting over the sterile ovary which latter is 5 lobed and terminates in a long acumination, filaments slightly hairy. Female flowers solitary on long peduncles nearly half the length of the leaves, calyx of 4, rarely only 3, large cordate imbricate nerved segments which enlarge with the fruit, corol urceolate gibbous, tube nearly globose, 4 rarely only 3 cleft at the apex, divisions reflexed, staminodia none, ovary 4 celled, stigmas 4 or 3 sessile, fruit globose covered with hairlike scales. *Bedd. Annual Report of the Conservator of Forests Madras Presidency for* 1867-68 *t.* 1 *and* 2.

This very curious species of Diospyros has only been observed in the Tinnevelly district and southern portions of Madura, where, however, it is very abundant in the ghat forests from the foot up to 3,000 feet elevation ; it is called Vellay Toveray and yields a valuable light colored wood, which is much in use in the Tinnevelly district.

PLATE No. CXXIII.

DIOSPYROS NIGRICANS. (Dalz.) Arboreous, glabrous turning very black in drying, leaves membranaceous glabrous oblong with a rather sudden acumination, and slightly attenuated at the base, 4-5 inches long by 1½-2 broad, petioles ¼-½ inch long, male flowers in small 3 flowered cymes crowded on small axillary ramuli, calyx 4 parted to the middle, lobes rounded or sub-acute pilose and ciliate, corol 4 cleft glabrous, lobes rounded or emarginate, stamens about 26 of unequal length, filaments all single and inserted in 2 rows on to the base of the corol, round a small 10 lobed rudiment of an ovary, female flowers solitary, calyx enlarging in fruit with the lobes much reflexed fruit glabrous, globose depressed 8 celled.—*Dalz. Hook. Jour. of Bot.* iv. *p.* 110.

Bombay ghats, the specimen figured is from Matheran (female specimens imperfect.)

PLATE No. CXXIV.

DIOSPYROS PANICULATA. (Dalz.) A middling sized tree, branches glabrous, leaves glabrous lanceolate oblong obtusely acuminate very coriaceous veins closely reticulated (as in Toposia) 5-9 inches long by 1½-2¾ broad, petioles ½-½ inch long, male flowers in axillary several flowered velvetty cymes, about ⅓rd the length of the leaves furnished with large ovate obtuse deciduous bracts, calyx ventricose 5 parted segments foliaceous with the margins reflexed reticulately veined, broadly oval obtuse and apiculated, corol velvetty outside, twice the length of the calyx, gibbous at the base and contracted at the mouth, the 5 segments oblong-obtuse as long as the tube, stamens about 20 in pairs subequal in length inserted on the base of the tube and nearly equalling it in length ; female flowers solitary from the branches between the leaves, peduncles 2-3 times as long as the petioles furnished with 2 large ovate

bracts about the middle, calyx glabrescent, as in the male but increasing with the fruit, fruit ovoid densely tomentose, 3-4 celled. *Dalz. Hook. Jour. of Bot.* iv. *p.* 109.

Bombay ghats (Dalzell).—Carcoor ghat (Wynad) 2,000-3,000 feet elevation. My specimens of the female tree are imperfect. I have not observed any difference in the size of the leaves of the 2 sexes, and I have specimens of the male tree from Mr. Dalzell with the leaves 7 inches long

PLATE No. CXXV.

DIOSPYROS CRUMENATA. (Thw.) A very large tree, branches glabrous, leaves glabrous oblong abruptly and obtusely acuminate rounded or slightly attenuated at the base 2-5 inches long 1-2 broad, petiole 3-4 lines long; male, cymes pilose 2-3 lines long 3-5 flowered bent downwards, calyx 2 lines long obscurely 4 toothed at the apex, corol hypocrateriform 5 lines long stamens about 12-13 of equal length anthers single seated on the torus; female, flowers large solitary on short thick peduncles (2-3 lines long) calyx 4 lines long pilose on both sides 4 lobed to the middle and dilated between the lobes, lobes rounded apiculate, corol a little longer than the calyx, sterile stamens about 8 equal in length, filaments single seated on the base of the corol, ovary 8 celled stigmas 4, fruit subspherical, 1½ 2 inches in diameter, at length glabrous 6-8 seeded, seeds black shining 1 inch long ½ inch broad, albumen ruminate. *Thw. En. Pl. Zey. p.* 179.

Ceylon mountains, 2,000 4,000 feet elevation.

PLATE No. CXXVI.

DIOSPYROS AFFINIS. (Thw.) A middling sized tree, branches subglabrous, buds pilose, leaves glabrous subcoriaceous prominently reticulated, lanceolate-oblong attenuated at both ends 1¼-4½ inches long by 6-16 lines broad, turning black in drying, petiole 3-5 lines long; male, cymes pilose 3-7 flowered a little longer than the petiole, calyx 1½ lines long shortly 4 toothed, corol 4 lines long hypocrateriform, stamens about 12 of equal length filaments single seated on the torus; female, flowers solitary large on short peduncles calyx 5 lines long pilose within, subglabrous on the outside, 4 cleft to the middle dilated between the lobes, lobes with long acuminations, sterile stamens 8 single of equal length seated on the base of the corol, ovary 6 celled styles 4 fruit spherical apiculate 1 inch long at length glabrous 4 seeded, seed 6-7 lines long 4 lines broad, albumen ruminate. *Thw. En. Pl. Zey. p.* 179, nearly allied to D. crumenata.

Ceylon mountains.

PLATE No. CXXVII.

DIOSPYROS QUŒSITA. (Thw.) A large tree, branches glabrous, leaves glabrous prominently reticulated oblong abruptly acuminate attenuated at the base 3-7 inches long by 1½-3 broad, turning blackish when dried, petioles 3-7 lines long channelled above as is the costa of the leaf; male, cymes 3-7 flowered pilose abont the length of the petiole, calyx shortly 5 toothed, corol hypocrateriform, stamens abont 16 of equal length, filaments single seated on the torus; female, floers swolitary calyx 5 lobed to the middle, dilated between the lobes, lobes acute, fruit subspherical 2-2½ inches long. *Thw. En. Pl. Zey. p.* 179.

Ceylon, in the dense forests at the south of the island at no great elevation; this is the tree which yields the valuable calamander wood of commerce.

PLATE No. CXXVIII.

DIOSPYROS PRURIENS. (Dalz.) A small or middling sized tree, young branches densely hirsute with long yellow hairs, leaves narrow-oblong with a blunt acumination and more or less cordate at the base glabrous on the upper side except the costa, very hirsute beneath 3-5½ inches long by 1-2½ broad, petioles 1-2 lines long; male, peduncles 2-3 times as long as the petioles axillary or between the axils, numerous and often congested on small young ramuli 1 flowered or very rarely with 2 flowers, calyx 4 parted divisions linear oblong obtuse reticulated glabrous within, very hairy on the outside, equalling the tube of the corol, corol hirsute on the outside, limb 4 parted with the divisions as long as the tube, stamens about 14 connate at the base unequal in length and seated on the torus surrounding a very small hairy rudiment of an ovary; female inflorescence as in the male, but corol more gibbous at the base, sterile stamens 4, very small on the corol tube, styles 2, stigmas dilated and more or less lobed, ovary very hairy 4 celled, fruit ovate-conical 1½ inch long densely covered with stinging hairs. *Dalz. Hook. Jour. of Bot.* iv. *p.* 110.

Very common throughout the Wynad up to 3,000 feet elevation, Anamallays, South Canara ghats and plains, Tinnevelly and Bombay ghats, also found in Ceylon.

PLATE No. CXXIX.

DIOSPYROS INSIGNIS. (Thw.) A very large tree, young branches slightly pilose, leaves subopposite or alternate submembranaceous glabrous oblong acuminate, attenuated or rounded at the base, 4-14 inches long by 1½-6 inches broad, petioles 3-5 lines long; male, capituli many flowered, flowers very small, calyx pilose 1½ lines long 4 parted to the middle, lobes acute, corol 4 lines long pilose on the outside, stamens unequal in length 14-20 single, in pairs, or occasionally 3 on the same filament partly on the base of the corol tube and partly on the torus round a small abortive ovary; female, flowers 1-3 axillary sessile, ovary 8 celled, fruit subspherical seated on the thick woody enlarged calyx which has reflexed margins. Seed 11 lines long, 6 lines broad, albumen ruminate. *Thw. En. Pl. Zey. p.* 180.

Anamallays in dense forests 2 3,000 feet elevation. Ceylon 2,000 feet. I have no perfect female flower for analysis.

PLATE No. CXXX.

DIOSPYROS OPPOSITIFOLIA. (Thw.) A middling sized tree, leaves opposite slightly pilose when young at length quite glabrous firm in texture ovate or elliptic abruptly shortly-acuminate, rounded at the base veinlets parallel obscure, 2-6 inches long by 1½-3 broad, petioles 1-2 lines long; male, capituli few flowered, calyx 1 line long 4 lobed to nearly the middle, lobes acute, corol slender about 3 lines long, stamens about 8 unequal; female flowers unknown.

Ceylon, up to an elevation of 1,000 feet; called Kalumidereya. The timber much resembles the true calamander wood; the plate is taken from a drawing executed in the Peradenia Herbarium in Ceylon.

PLATE No. CXXXI.

DIOSPYROS GARDNERI. (Thw.) A middling sized tree, branches terete glabrous, buds fusco pilose, leaves membranaceous glabrous and shining inconspicuously veined narrow oblong acuminate a little narrowed at the base, 3-7 inches long by 1½-2 broad, petioles 3-4 lines long. Male, flowers 1-4 axillary subsessile, calyx 2 lines long 4 parted to the middle, lobes triangular acute, corol 5 lines long, tube slightly inflated, stamens about 12 all more or less connate at the base, filaments pilose; female, flowers solitary erect, calyx 2½ lines long, lobes recurved, margins reflexed, ovary 8 celled, berry depresso-spherical apiculate (immature), 1 inch long fulvo-pilose when young at length glabrous shining and half hid in the much enlarged calyx. *Thw. En. Pl. Zey. p.* 181.

Ceylon, up to 2,000 feet elevation; called Kadoombaireya. Yields a valuable timber for building and cabinet purposes.

PLATE No. CXXXII.

DIOSPYROS MICROPHYLLA. (Bedd.) A lofty tree, trunk very straight, young branches verticellate, hirsute with long yellowish hairs, old branches glabrous, leaves alternate, elliptic obtusely acuminated, slightly attenuated at the base glabrous above, sparingly hirsute with long hairs beneath when young, at length glabrous ¾ to 1½ inches long by ⅜ to ⅝ of an inch broad, petioles 1-2 lines long; male, capituli axillary subsessile 3 flowered bracteated, flowers very small about 1 line long, calyx 4 parted to the middle, divisions ovate acute hirsute on the outside, corol 4 cleft divisions rounded apiculate, hirsute on the outside in a line down the centre, anthers sixteen in pairs 1 longer than the other inserted on to the base of the corol tube, rudiment of the ovary small hairy inconspicuously 8 lobed; female flowers solitary in the axils, as in the male, no rudiment of stamens, ovary 4 celled, stigmas 2—fruit not seen.

Anamallays, dense forests up to 3,000 feet elevation; very common in South Canara, forests of the ghats and plains (Sooleya) Wynad; it has the habit of Leucoxylon buxifolium, *Mig.*

PLATE No. CXXXIII.

DIOSPYROS CANARICA. (Bedd.) A good sized tree, glabrous, leaves oblong to obovato-oblong, with a blunt, acumination glabrous paler beneath 5-9 inches long by 1½-3 broad, petiole ½-¾ inch long, male capitula axillary many flowered subsessile, flowers very small, calyx 5 cleft ⅓ or ½ down, sericeous, corol about double as long as the calyx very silky on the outside stamens 10 unequal in length in pairs inserted on to the base of the corol tube, a small ovoid hairy rudiment of an ovary; female flowers in axillary capitula, as in the male but rather larger, calyx 5 parted to below the middle, dilated between the lobes, and margins reflexed, sterile stamens 8-10 unequal in length in pairs inserted on to the base of the corol tube, ovary 4 celled, styles 2—fruit not seen.

South Canara, plains near the foot of the ghats; called Kara mara, allied to D. Arnottiana, *Mig.*

PLATE No. CXXXIV.

DIOSPYROS THWAITESII. (Bedd.) A middling sized tree, branchlets, young leaves and inflorescence rufo-tomentose, leaves elliptic with a long gradual acumination slightly attenuated at the base, 4-5 inches long 1-1½ broad, reddish brown when dry, petioles about ½ an inch long. Male, flowers 1-3 sessile in the axils, bracteated, stamens 10-12 in pairs of nearly equal length inserted on to the base of the corol tube; female, flowers as in the male, calyx enlarging in fruit, sterile stamens 5 on the corol tube, each anther tipped with 2 very long setæ. styles 3, 2 cleft, ovary 4 celled, fruit subspherical, densely rufo-pilose at length glabrous 7 8 lines in diameter, seed oblong black transversely striated 5 lines long 2½ lines broad, albumen ruminate. Diospyros Candolliana. *Thw. En. Pl. Zey. p.* 181—(not Wight.)

Ceylon, at no great elevation; allied to, but quite distinct from D. Candolliana of Wight.

PLATE No. CXXXV.

DIOSPYROS NILAGIRICA. (Bedd.) A middling sized tree, branchlets, young leaves and inflorescence densely rufo-tomentose, leaves elliptic attenuated at both ends glabrescent and shining above 5-6 inches long by about 2 inches broad; male flowers, in axillary subsessile several flowered capitula bracteated, calyx 4 cleft to about the middle, corol 4 cleft with the lobes rounded, stamens, 16 unequal in length in 8 pairs inserted on to the base of the tube of the corol. filaments hairy, a small hairy ovoid rudiment of an ovary; female flowers sessile or 2 in the axils of the leaves, calyx enlarging in fruit dilated between the lobes with the margin reflexed sterile stamens 8 alternately longer on single filaments inserted on to the base of the corol tube, styles 4 much reflexed, stigmas dilated, ovary 8 celled, fruit globose depressed size of a small greengage.

Sispara ghat (Nilgiris), allied to D. Candolliana of Wight.

PLATE No. CXXXVI.

DIOSPYROS HIRSUTA. (*L.*) A middling sized tree, young leaves and inflorescence ferrugineo-tomentose, leaves subcoriaceous elliptic or oblong more or less abruptly acuminate, slightly narrowed at the base, at length subglabrous 3-8 inches long 1-3 inches broad, petiole tomentose 3-4 lines long; male capitula many flowered, calyx 1 line long, 5 parted nearly to the middle, corol about 2 lines long, rudiment of ovary small, stamens 5 on the torus round the rudimentary ovary; female flowers 1-3, calyx thick 3 lines long 5 parted to beyond the middle, lobes triangular acute margins reflexed, corol a little longer than the calyx, sterile stamens 5 on the corol tube, ovary 10 celled, fruit ovoid apiculate fulvo-tomentose 9 lines long 6-10 seeded seated on the enlarged calyx, seeds black transversely striated 7 lines long 3 lines broad, albumen ruminate.—There are occasionally female flowers in the capitula on the male tree, they are small and have the ovary only 6 celled and are probably abortive. *Thw. En. Pl. Zey. p.* 181;—*L. f. Supp. p.* 440;—*A. DC. Vol.* viii. *p.* 223.

Ceylon forests of the south of the island.

PLATE No. CXXXVII.

DIOSPYROS MOONII. (Thw.) A middling sized tree, branches terete slightly pilose when young but soon glabrous, leaves coriaceous oblong acuminate rounded at the base, glabrous above, costa and petiole channelled, sparingly pilose beneath 5-12 inches long 1½-4 inches broad, petiole 3 lines long, inflorescence axillary, fulvo-pilose, male capitula 6 10 flowered, calyx 2 lines long 5 parted nearly to the middle, corol about 4 lines long, stamens 5. Female flowers 1-2, calyx thick 3 lines long margin revolute, corol about equal to the calyx in length, stigma obscurely 5 lobed, fruit 1½ inches long 6-10 seeded, seated on the enlarged calyx, seed oblong compressed, transversely rugose, blackish 7 lines long 4 lines broad, albumen ruminate. *Thw. En. Pl. Zey. p.* 182.

Ceylon at no great elevation—(from a drawing executed in the Ceylon Herbarium.)

PLATE No. CXXXVIII.

DIOSPYROS ATTENUATA. (Thw.) A middling sized tree, leaves membranaceous glabrous or sparingly pilose oblong acuminate attenuated at the base into a short petiole, closely and minutely reticulated, pale beneath, 1½-4 inches long, ½-1 inch broad, petiole 1-2 lines long, inflorescence strigose, with brownish yellow hairs amongst which are mixed some black hairs, male capitula 3 10 flowered, calyx 1 line long 4-5 parted to below the middle, lobes lanceolate acute, corol about 2 lines long, stamens 5 on the base of the corol tube round the rudiment of an ovary, female flowers solitary axillary, calyx 3-4 lines long 4-5 parted to below the middle lobes lanceolate acute reflexed at the margin, corol a little longer than the calyx, sterile stamens 5 on the corol tube, stigmas 2 short spathuliform, ovary 4 celled fruit oblong acuminate 1-1½ inches long, 2-3 seeded, seeds chestnut shining oblong acuminate, albumen not ruminate. *Thw. En. Pl. Zey. p.* 183.

Ceylon, Pasdoon Corl, at no great elevation; the flowering branch of the male tree is from a drawing executed in the Peradenia Herbarium, Ceylon.

PLATE No. CXXXIX.

D. EBENUM, D. EXSCULPTA, D. WIGHTIANA, AND D. EMBRYOPTERIS. Valuable timber trees in Southern India, have been figured in the Flora Sylvatica. D. assimilis figured in the Conservator's Annual Report for 1866-67, is perhaps only a variety of ebenum; D. Candolliana (Nilgiris), dubia (foot of Sevagherries and Courtallum), montana (eastern and western side of the Presidency), ovalifolia (throughout the western forests), chloroxylon (capitulata, Wight), and cordifolia, Eastern side, and obovata (locality not given) have all been figured by Dr. Wight, and I have met with them all frequently except the last species which is quite unknown to me.—Diospyros acuta (Thw.) is a Ceylon tree, of which I have no specimen, and I have observed several other species in the dense forests of our Western Coast, of which I have not been able to procure specimens in flower, the genus is well represented in Bengal and Birmah.

GERANIACEÆ.

IMPATIENS PARASITICA. (Bedd.) Parasitic on trees, stems very succulent often moniliform and throwing out roots, leaves crowded about the apex of the branches glabrous long petioled ovate acute, crenate with incurved bristles 1½-2 inches long by about 1 inch broad, petioles ½-¾ inch long, peduncles axillary very short bearing 2 (rarely only 1) long pedicels (about 9 lines long) upper sepals green with a foliaceous crest, lateral ones very small linear acute, lower one bright red saccate with a recurved spur, upper of compound petals much smaller than the lower, both almost entirely hid in the saccate sepal, capsule glabrous ovate gibbous, seeds numerous small. *Bedd. Mad. Journ. of Lit.* 1859.

Anamallays on trunks of trees 5,000-7,000 feet. I have not met with this very lovely species anywhere but on the Anamallays, but it is now in cultivation on the Nilgiris; it is allied to I. Jerdonii and viridiflora, and though its flowers are smaller than those of Jerdonii, it is a far more beautiful species, as it is a most profuse bloomer, a small mass in a pot being often covered with 60 or 80 flowers and remaining in full bloom from May till November; it is quite hardy in the open air in Ootacamund, never being injured by the slight frosts we experience, it grows admirably in lumps of brick and charcoal, and cuttings root readily if stuck into the same compost

PLATE CXL.

IMPATIENS VIRIDIFLORA. (Wight.) Parasitic on trees, glabrous, stems very thick (often 1 inch in diameter) fleshy erect, leaves rather succulent alternate and crowded towards the apex of the branches lanceolate to ovate or obovate acute at the apex and always more or less attenuated at the base, crenate with the crenatures furnished with incurved weak bristles, 2½-3½ inches long, by 1-1¼ broad, petioles ¼-½ inch long, peduncle axillary 2 (rarely only 1) flowered, ¼-½ inch long, bracteoled at its apex, pedicels elongate 1-1¼ inches long, flowers green, upper sepals (vexillum) vaulted and crowned with a very large erect foliaceous crest, lateral sepals subulate reflexed, 2 combined lateral petals (alœ) thick fleshy the upper smaller and quite hid under the vexillum, spur (labellum) large with a revolute point, capsule glabrous. *Wight in Mad. Journ. of Lit.* v. *p.* 9.

I have only found this curious parasitic species on trees at the top of the Sivagherry ghat (5,000 feet) where it is abundant; it is now in cultivation in gardens and grows well in lumps of brick and charcoal; it is more curious than beautiful. It is nearly allied to Imp. parasitica, but the alœ are differently shaped and scarcely at all hid in the labellum, whereas in parasitica the lower lobe is quite hid in it; the flowers of this are perfectly green.

PLATE No. CXLI.

IMPATIENS PARVIFOLIA. (Bedd.) Herbaceous sub-erect, branched, glabrous, leaves alternate or subopposite minute ovate deeply serrated, furnished with a few hairs or glabrous 3-7 lines long by 1½-3 lines broad, peduncles axillary solitary 5-6 times longer than the leaves, umbellately or subracemosely flowered towards the apex, vexillum small and slightly vaulted over the staminal crown, lateral sepals small and pointed upwards, alœ with the upper lobe small, the lower one large and spreading pale pink with a bright crimson blotch on the upper lobe and a similar mark on the vexillum which is also pinkish, labellum greenish, boat-shaped with a small obtuse spur, seeds several hairy, flowers 5-6 lines long.

Anamallays, covering rocks during the monsoon on the summit of the Akka mountain, 8000-8600 feet elevation.

PLATE No. CXLII.

IMPATIENS TRAVANCORICA. (Bedd.) Herbaceous 6-8 inches in height not branched, stems glabrous, leaves crowded towards the apex, ovate or sometimes obovate, bristly crenate, the margin at the base of the leaf being furnished with 1-2 very long weak setæ, similar hairs or setæ being sparingly scattered over the upper surface of the lamina, 1-1½ inches long by 7-10 lines broad; petioles 1¼-1¾ inches long, peduncles axillary, about the apex of the branches about as long or a little longer than the petioles umbellately flowered at the apex, flowers white 6-8 lines long very delicate in texture, vexillum vaulted, lateral sepals rather large obliquely ovate 3 nerved, alœ with the upper lobe small, the lower large and spreading, labellum boat-shaped with a short (sometimes obsolete) conical blunt spur.

Travancore hills, Myhendra and Aghasteer at 4-5000 feet elevation.

PLATE CXLIII.

IMPATIENS SCABRIUSCULA. (Heyne.) Erect, branched, tomentose, leaves alternate, linear-lanceolate acute at the apex and much attenuated at the base cuspidate-serrated, upper side slightly, under side rather densely pubescent with weak pellucid jointed hairs, 2-3 inches long by 4-6 lines broad, petioles 2-6 lines long, peduncles aggregated or rarely solitary in the axils much shorter than the leaves, pubescent, vexillum pubescent with a crest, lateral sepals very small, lower lobe of the alœ large and spreading, labellum boat-shaped pubescent spurless or produced into a long filiform spur. *Heyne in Roxb. Fl. Ind.* (*ed Wall.*) 2. *p.* 464.

Var. α. spurless.

Var. β, labellum produced into a long spur.

Var. α is very common in Wynad and is the plant figured. Var. β I have only found in Coorg; it differs in no way except in the labellum being prolonged into a long filiform spur.

PLATE CXLIV.

IMPATIENS ELEGANS. (Bedd.) Herbaceous, erect often throwing out roots from the joints, somewhat branched, leaves alternate ovate acuminate, crenate with incurved bristles, above with a few hairs on the veins, beneath pale glabrous, 3-4 inches long by about 1½ broad, petioles 1½-2 inches long, peduncles axillary solitary from shorter to a little longer than the petioles, 3-5 flowered towards the apex (umbellately or sub-racemosely), and there furnished with ovato-lanceolate acuminate bracteoles, vexillum broad ovate flat with a green ridge at its back, lateral sepals small ovate with a green ridge ending in a point, upper lobe of the alœ very small rather square and inflexed over the staminal crown, lower lobe large and spreading, labellum small boat-shapen without a spur, flowers pale rosy white with a purple eye, capsule glabrous, seeds hairy.

Common on the Anamallays from 2,500 to 4,500 feet elevation; the flowers are very much larger at the higher elevations. Except in the absence of a spur it is much like Imp. cordata, *Wight*, but is a more delicate plant. Dr. Hooker unites cordata of Wight with viscida, but they are quite distinct.

PLATE CXLV.

IMPATIENS WIGHTIANA. (Bedd.) Suffruticose erect branched, leaves alternate glabrous, lineolate, narrow-lanceolate acuminate, incurved-bristly-serrate, a few hairs on the nerves above, glabrous below 5-6 inches long by 1¼-1¾ broad, petioles 1½-2½ inches long furnished with numerous pedicelled glands towards the apex, peduncles axillary solitary a little longer than the petioles, racemed nearly their whole length, flowers 12-14 lines long white with vexillum and alœ mottled with pink, vexillum with a green ridge at its back, lateral sepals small, labellum ventricose with a short incurved spur, alœ with the upper lobe very small, lower lobe much elongated and narrow, bracteoles small ovate, pedicels in fruit horizontal, fruit with about 5 seeds, seeds hairy.

Anamallays, moist forests 3000-4500 feet elevation.

PLATE CXLVI.

IMPATIENS TANGACHEE. (Bedd.) Herbaceous sub-procumbent, glabrous, leaves alternate subverticelled acuminate bristly-serrate 2½-4 inches long, by ½-¾ inch broad, petioles scarcely any beyond the dilated base of the leaf, peduncles axillary much longer than the leaves 4-8 flowered towards the apex, bractes large boat-shaped persistent, pedicels erect in flower, slightly reflexed in fruit, flowers 12-14 lines in length, bright rose, vexillum large vaulted, ovate, lateral sepals ovate pointed, labellum with a long tapering recurved spur, alœ large and spreading, the upper lobe about ½ the size of the lower, capsule glabrous gibbous, seeds numerous very small.

Anamallays, 4000 feet and upwards, most abundant on the higher ranges in beds of rivers; a very beautiful species.

PLATE CXLVII.

IMPATIENS PHŒNICEA. (Bedd.) Suffruticose erect glabrous, leaves deep green and shining, lanceolate attenuated at both ends, incurved bristly-serrate, 3-4 inches long by 1-1½ broad, petioles 4-8 lines long, peduncles axillary as long or longer than the leaves, racemose or occasionally dichotomously branched towards the apex and furnished with cordate boat-shaped permanent bractes at the base of the pedicels, flowers brilliant scarlet with a little yellow in the centre about 1 inch long, 4-14 to each peduncle, pedicels slender ¾ inch long, vexillum vaulted winged at its back, alœ spreading, the lower lobe about twice as large as the upper, lateral sepals small, labellum gradually attenuated into a long recurved spur which is swollen and gland like at its point.

Pulney Hills, sholas on the higher ranges, 6-7000 feet, (abundant in the Kodinkarnal Shola). This very beautiful species is very similar to the Imp. Walkeræ of Ceylon; it is only found on the Pulneys; it is easy of cultivation from cuttings, and well worth a place in gardens.

PLATE CXLVIII.

IMPATIENS LIGULATA. (Bedd.) Herbaceous, much branched, glabrous, leaves opposite linear-lanceolate mucronate at the apex, sessile, more or less cordate and stem-clasping at the base, remotely bristle-toothed, above furnished with very minute harsh pubescence below glabrous and glaucous, 3-4 inches long by 6-8 lines broad, petioles none or 1 line long, peduncles 1-3 axillary 1 flowered about ½ the length of the leaves minutely pubescent, flowers about 1 inch long pink or rarely white, lateral sepals small linear lanceolate acute, vexillum small vaulted slightly pubescent along the centre of the back, alœ with a long filiform inner lobe which is completely hid in the spur, lower lobe large and spreading, labellum with a longish recurved gibbous spur, capsule swollen in the centre glabrous with about 12 black shining seeds.

This pretty species is rare; I have only observed it in the Anamallay Teak forests (about Toonacadavu) elevation 1500-2500 feet, and in one locality in Malabar at a somewhat lower level; it is allied to some forms of I. Chinensis; it is easily propagated from seed.

PLATE CXLIX.

IMPATIENS ANAMALLAYENSIS. (Bedd.) Herbaceous, erect, often with small branches from the axils of the lower leaves, leaves opposite (those of the branchlets alternate) ovate, incurved-bristly-serrate above with a few distant hairs, below glabrous and pale, 1½-2 inches long by 8-14 lines broad, petioles up to one inch long, peduncles filiform axillary from nearly as long to much longer than the leaves, racemosely 3-8 flowered towards the apex, pedicels very slender 3-5 lines long furnished with filiform bracteoles at their base, flowers pinkish 3-4 lines in length, alœ elongate, upper lobe with a ligulate appendage which is hid in the labellum, lower lobe 2 lobed, labellum with a short nearly straight gibbous spur capsule ovate pointed glabrous, seeds 6-8 very hairy. Anamallays and Pulneys, 3-7000 feet.

PLATE CL.

IMPATIENS DENISONII. (Bedd.) Scapigerous, leaves radical ovate cordate acute or obtuse at the apex, bristly-crenate furnished above with numerous weak hairs, glabrous below, 4-6 inches long by 3-4 inches broad, petioles generally a little shorter than the leaves, scapes twice to four times as long as the leaves, flowers numerous racemed towards the apex, pink, about 1 inch long, pedicels 12-16 lines long furnished with a small ovate bracteole at their base, lateral sepals small ovate, vexillum rather large broadly ovate vaulted, alœ with a dense tuft of petaloid hairs across the upper portion of the inner face, lower lobe deeply bifid (as in rivalis), upper lobe furnished with a long filiform appendage which is entirely hid in the whole length of the spur, labellum with a long recurved spur, capsule glabrous, seeds very small numerous.

This very delicate and beautiful species is very abundant on the Sisparah ghat (Nilgiris), 4-5000 feet elevation, on rocks and trunks of trees. I have never met with it elsewhere. Dr. Hooker considers it a variety of rivalis, but I do not think any one who saw the 2 plants growing would consider them varieties of the same species ; rivalis has very much larger flowers, and never has the long filiform appendage always present in this. Some botanists are inclined to unite rivalis with acaulis, but they could never be confounded except in dried examples, acaulis has the lower lobe of the alœ entire, and in rivalis it is always deeply bifid.

PLATE CLI.

IMPATIENS ORCHIOIDES. (Bedd.) Scapigerous, leaves radical, orbicular to ovate with a deep cordate base, obtuse at the apex bristly crenate, furnished above with numerous weak hairs, below nearly glabrous, about 2 inches each way, petioles 3-5 inches long, scapes about 6-7 inches long, racemosely 6-10 flowered towards the apex, flowers reddish-brown 10 lines long, pedicels 6-8 lines long, bracteoles ovate, lateral sepals small ovate, vexillum ovate, alœ entire above, below produced into 2 long linear lobes, labellum ovate saccate without a spur, capsule glabrous, seeds numerous brown minutely scrobiculate.

This very curious delicate species I have only observed on the Koondahs, growing on trunks of trees in sholas near the head of the Avalanche ghat (in flower in September) ; its flowers much resemble some species of Liparis.

PLATE CLII.

IMPATIENS GRANDIS. (Heyne.) Perennial, erect tall shrubby with thick fleshy branches perfectly glabrous, leaves glabrous oval to ovate acuminate, incurved-bristly-crenate, 5-6 inches long by 3 broad, petioles 2-5 inches long furnished with 2 stipitate glands a little above the middle, peduncles axillary erect 4-6 inches long, flowers 2-6 umbellate on 1-2 inches long pedicels, flowers 2-3 inches long by 2 inches across white flaked with crimson, lateral sepals oval to lanceolate, vexillum broad ovate, alœ with the lower lobe twice as large as the upper one, labellum very variable sometimes produced into a long tapering straight or recurved spur sometimes only a deep oblong rounded bag. *Heyne in Wall. Cat.* 4759. Impatiens Hookeriana, *Arnt.*

This very fine species is very common in South Tinnevelly, 1-4000 feet, and is also abundant in Ceylon ; it is easily propagated by cuttings.

PLATE. CLIII.

In a paper on this genus which I published in the Mad. Lit. Society's Journal, I described 2 species under the names of *I. crenata* and *I. Akka ;* they are both varieties of one species, but I have not specimens at hand to figure. It is a very pretty species of the Scapigeræ group (and is perhaps not distinct from I. Stocksii, H. f. et T. from Canara, which I have not seen) ; it covers rocks on the Akka mountain and other localities on the Anamallays at 7000-8000 feet, but I have seen it nowhere else.

The Scapigeræ group is well marked, and to it belong I. modesta, *Wight.* (= tenuis, *Bedd. Mad. Journ.*) ; I. scapiflora, *Heyne ;* I. acaulis, *Arnt.* (= gracilis, *Bedd. Mad. Journ.*) ; I. rivalis, *Wight* (of which verrucosa, *Bedd.*, is only a variety) quite distinct as a species from acaulis. I. Denisonii, *Bedd.*, and I. orchioides, *Bedd.* The last two named I have only seen on the Koondahs (Nilgiris West,) but the others are pretty general throughout our western forests.

The epiphytic group is also a well marked section : it contains Jerdonii, auriculata and viridiflora of *Wight*, and parasitica, *Bedd.* ; they are all epiphytic on the trunks and boughs of trees, and have short fleshy stems often 2 inches in diameter. Jerdonii, a most lovely species, is found on trees on the banks of the river just below the coffee estate on the Sisparah ghat, elevation 3-4000 feet on the top of the Bramagherries, 5000, and on the Palghat hills ; it is not found south of the Palghat gap ; auriculata and viridiflora are only found on the mountains in Tinnevelly and Travancore ; the former is very abundant on the Attraymallay and other localities, 5000 feet and upwards ; the latter I have only seen on the top of the Sevagherry ghat, 5000 feet ; parasitica is restricted to the Anamallays, but is most abundant there all over the higher ranges and occasionally as low down as 4000 or 3500 feet.

It is not easy to class the other species in well marked groups, as some species have both opposite and alternate leaves, and their flowers racemed or umbellate on the same plant. Some species are very local, and others widely dispersed. The following list may guide collectors of these interesting plants.

* *Leaves opposite, or verticelled peduncles 1 flowered,* (in latifolia, Leschenaultia, and lucida, leaves often alternate.)

I. CHINENSIS, *L.* (= I. fasciculata, *WA.* ; I. heterophylla, *Wall.*)—Common, plains up to 8000 feet, very variable.

I. OPPOSITIFOLIA, *L.* (= I. rosmarinifolia, *Retz.*)—Common 3-5000 feet.

I. GARDNERIANA, *W.*—Sispara ghat, and Wynad, only 3-4000 feet.

I. RUFESCENS, *Benth.*—Common 4-7000 feet.

I. TOMENTOSA, *Heyne* (= ramosissma, *Dalz.*)—Common, 3-7000 feet.

I. DIVERSIFOLIA, *Wall.*—Malabar (unknown to me).

I. LAWII, *H. f. et T.*—Malabar, Canara, and Concan, 3-4000 feet.

I. INCONSPICUA, *WA.* (= I. filiformis, *WA.* ; I. pusilla, *Heyne*).—Common, 3-8000 feet, very variable.

I. KLEINII, *WA.*—Common, plains up to 4000 feet.
I. SETOSA, *H. f. et T.*—Sispara ghat, Nilgiris only, 3-4000 feet.
I. TENELLA, *Heyne.*—Malabar (unknown to me).
I. DALZELLII, *H. f. et T.*—Concan.
I. LATIFOLIA, *L.* (= cuspidata, *WA.*; floribunda, *Wight*; flaccida, *Arnt.*; bipartita, *Arn.*)—Common 3-7000 feet.
I. LESCHENAULTII, *Wall.* (= leptopoda, brevicornu, and gibbosa, *Arnt*).—Common, 3-7000 feet.
I. LUCIDA, *Heyne.* (=latifolia, *WA*).—Common, 4-7000 feet.
I. LIGULATA, *Bedd.*—Anamallays, and Malabar plains up to 2500 feet.

* * *Leaves opposite, or verticelled peduncles 2 many flowered.*

I. VERTICELLATA, *Wight.*—Anamallays, Palghat hills, Tinnevelly and Travancore, 2000-4500 feet.
I. ANAMALLAYENSIS, *Bedd.*—Anamallay and Pulneys, 3-7000 feet.
Anamallayensis has alternate leaves on its branchlets; Goughii belongs as much to this section as to the one it is placed under.

* * * *Leaves alternate, peduncles 1 flowered.*

I. BALSAMINA, *L.* (= arcuata, *Wall*).—Common plains up to 4000 feet.
I. SCABRIUSCULA, *Heyne.*—Wynad and Coorg, 2-4000 feet.
I. MUNRONII, *Wight* (white and red flowering varieties).—Nilgiris West only, 5-7000 feet.
I. DASYSPERMA, *Wight.*—Common, plains up to 3000 feet.
I. PULCHERRIMA, *Dalz.*—Concan.
I. HENSLOWIANA, *Arnt.* (=albida, *Wight*).—Common, 3-7000 feet.

* * * * *Leaves alternate, peduncles 2 many flowered; (in Goughii leaves sometimes opposite.)*

I. GOUGHII, *Wight.* (= viscosa, *Bedd.*)—Nilgiris and Anamallays, not common, 3-7000 feet.
I. FRUTICOSA, *DC.*—Common, 4-6000 feet.
I. VISCIDA, *Wight.*—Pulney hills, higher ranges only, in beds of rivers.
I. ELEGANS, *Bedd.*—Anamallays only, 2-5000 feet.
I. CORDATA, *Wight.*—Anamallays, and all the hills south of them, 3-5000 feet.
I. GRANDIS, *Heyne.* (= Hookeriana, *Arnt*).—Tinnevelly and Travancore 1-4000 feet.
I. CAMPANULATA, *Wight.*—Common, 4-7000 feet.
I. MYSORENSIS, *Heyne.*—Not known to me.
I. PENDULA, *Heyne.*—Not known to me. } Mysore.
I. PARVIFOLIA, *Bedd.*—Anamallays only, 7-8000 feet.
I. MACULATA, *Wight.*—Common, 4-7000 feet.
I. PHŒNICEA, *Bedd.*—Pulney hills only, 6-7000 feet.
I. UNCINATA, *Wight.*—Tinnevelly only, abundant in the vicinity of Courtallum, 2-3000 feet.
I. UMBELLATA, *Wight.*—Tinnevelly only, abundant in the vicinity of Courtallum, 2-3000 feet.
I. TANGACHEE, *Bedd.*—Anamallays only, 4-7000 feet.
I. WIGHTIANA, *Bedd.*—Anamallays only, 3-5000 feet.
I. TRAVANCORICA, *Bedd.*—Travancore hills only, 3-5000 feet.

The epiphytic species are very beautiful plants for cultivation, and their succulent stems keep alive for weeks packed in dried moss; they are most readily propagated, the smallest cutting put into small lumps of brick and charcoal rooting most readily. The larger species, such as Henslowiana, campanulata, grandis, phœnicea, &c. are readily raised from cuttings, and the stems retain their vitality for some time, and can be carried about for ten or twenty days in damp moss; the more delicate species are very difficult to raise as they will scarcely ever germinate from seed. I have most constantly tried to grow all these from seed, but have failed in almost every case. I have however succeeded well with ligulata, scapiflora and parvifolia. The Scapigeræ section are easily grown from their tuberous roots, and are well worth cultivating. Dr. Wight figures almost all the species not figured in this work.

The following S. Indian species are also common to Ceylon.
Impatiens oppositifolia, balsamina, latifolia, Henslowiana, Leschenaultii, grandis, and acaulis.
The following species are peculiar to Ceylon, and I hope shortly to figure some of them.

Leaves alternate, peduncles 1 flowered.

I. truncata, *Thw.*; macrophylla, *Gardn.*; glandulifera, *Arnt.*; repens, *Moon.*

Leaves alternate, peduncles several flowered.

I. Walkeri, *Hook*; elongata, *Arnt.*; subcordata, *Arnt.*; cornigera, *Arnt.*; Arnottii, *Thw.*; linearis, *Arnt.*; appendiculata, *Arnt.*; leucantha, *Thw.*; janthina, *Thw.*

GENTIANACEÆ.

EXACUM ANAMALLAYANUM. (Bedd.) Perennial, shrubby 2-3 feet high, stems very woody at the base, terete more or less angled when young, leaves very thick and coriaceous from broad lanceolate to broad ovate 3-5 nerved stem clasping, slightly acute at the apex, 2-2½ inches long by 1-1½ broad, flowers intensely deep blue, 1½ to 2 inches in expansion, peduncles crowded at the apex of the branches and from the upper axils, sepals acuminate, petals acute or mucronate.

Anamallays and Pulney mountains, 6-7000 feet elevation. This is by far the most lovely species of the genus, its foliage is very beautiful, and its flowers are of the deepest ultramarine. I always looked upon it as a form of the Ceylon E. macranthum until I saw that species growing; it is however very distinct, the leaves are very thick, leathery and opaque.

PLATE. CLIV.

Exacum atropurperum (Pl. cxix *of this work) was drawn from a specimen collected on the Travancore hills* (4500 *feet elevation). I have lately found it on the mountains near Palghat at nearly* 7000 *feet. Exacum Wightianum* (*Wight's Icones*, 840) *I have lately found in high grass on the Shevaroys* (*elevation* 4500 *feet). It is a superb species, but perhaps only a very luxuriant variety of bicolor, bicolor and tetragonum are scarcely distinct; and E. Zeylanicum, macranthum, Walkeri and Perrottettii are I believe all forms of one species. E. Courtallense is very closely allied to Perrottetii, but is more membranaceous, and I have a species in my Herbarium from the Travancore hills* (4000 *feet*) *which I at first thought new, but now look upon as only a very luxuriant form of Courtallense, it has its leaves very much broader, and the flowers* 2½ *inches across.*

The very cæspitose fleshy leaved E. Travancoricum (*Pl.* cxvii *of this work*) *is a most distinct species, and one of the most beautiful plants in this Presidency; it is abundant on the Attraymallay in Travancore.*

COMBRETACEÆ.

QUISQUALIS MALABARICA. (Bedd). A very large climber, young stems very minutely puberulous, leaves opposite elliptic, oblong more or less acuminated very minutely puberulous on the costa and veins, otherwise glabrous penniveined quite entire 3-6 inches long by 1-2¼ broad, petioles 4-8 lines long slightly puberulous, jointed near the base, leaving a permanent hard base after the fall of the leaf, which become large hooked blunt topped spines (on the older branches) racemes terminal 1½-1¾ inches long; minutely silky pubescent, bracts narrow linear 2 lines long, flowers deep pink 1 inch long (on pedicels 3 lines in length), calyx and corol silky on the outside, petals linear lanceolate acute, style adglutinate to the calyx tube, not reaching the lower stamens, stamens all included, the upper 5 opposite the segments of the calyx, the lower ones opposite the petals, ovary hairy 1 celled with 3 pendulous ovules; fruit not seen.

A very large creeper, Carcoor ghat, Wynad, elevation about 1500 feet.

PLATE CLV.

MELASTOMACEÆ.

SONERILA TRAVANCORICA. (Bedd.) Perennial suffruticose, erect, branches terete sometimes marked with a decurrent rib from the insertion of the leaves, densely villous, leaves opposite ovate to elliptic, acute at the apex, quite entire or inconspicuously crenate near the apex, densely villous on both sides (especially so on the mid rib and veins beneath) with adpressed long tawny hairs, 2½-3½ inches long by 1¼-1¾ broad, petioles densely villous, ½ to 1½ inches long, peduncles terminal about 1 inch long subumbelliform 5-6 flowered, pedicels short at first recurved, erect in fruit, peduncles pedicels and calyx hirsute with gland tipped hairs, calyx prominently nerved, petals obovate to sub-rotund often mucronulate furnished with a line of gland tipped hairs down the centre of the back, anthers deeply sagittate at the base recurved and attenuated into a long point at the apex, style longer than the filaments, capsule ribbed and covered with gland tipped hairs, flowers pink about 1¼ inches across.

Travancore mountains (Attraymallay), 3500-5000 feet. A very beautiful species, somewhat resembling the much more membranaceous *versicolor*, which however is annual; this besides is far more densely pubescent and the venation of the leaves is different.

PLATE CLVI.

MEDINILLA MALABARICA. (Bedd.) Epiphytic glabrous subscandent, copiously rooting, branches warty, leaves very fleshy opposite lanceolate 3 nerved, the lateral nerves springing from the costa a little above the base, costa and nerves very prominent beneath, occasionally the leaves are sub 5 nerved, the outer nerves being thin and near the margin, entire or inconspicuously crenate undulate near the apex, scarcely acute at the apex, glabrous, 3-3½ inches long by 1½ broad, petioles 4-7 lines long, peduncles quite glabrous generally several together in the axils 2 lines to ¾ inch long, 3-5 flowered, furnished with 2 minute bractes at the apex, lateral pedicels 10 lines long jointed and bracteoled at the middle occasionally 2 flowered, terminal one not jointed, calyx-tube turbinate quite entire or with 4-8 most minute teeth, petals 4 fleshy oblong with a cultriform apex much imbricate, stamens 8, equal inserted round the apex of the stamen tube (which lines the calyx) inflexed in the bud, filament with 2 glandular swellings at its apex on the inside, anthers

opening by a terminal pore, connective at the back produced into a short blunt spur, ovary somewhat 8 lobed deeply sunk in the calyx tube, its apex on a level with the insertion of the stamens and its sides joined to the disk or staminal tube by 8 partitions, naked at its apex or crowned round the base of the style with 8 deciduous small filiform processes, ovules numerous in each cell attached to the central placentas, fruit turbinate indehiscent succulent crowned with the calyx-limb and quite enclosed except its apex in the disk and calyx, the cells becoming somewhat obsolete, seed obovoid, testa hard smooth, the flowers, peduncles, pedicels, petioles and base of the lamina are all of a brilliant crimson, the base of the lamina is often produced into 2 minute gland-like points at the apex of the petiole.

This beautiful epiphyte is most abundant on the Anamallays, chiefly on the higher ranges where it quite covers trees, but also at lower elevations down to 3500 feet. I have also observed it on the western slopes of the Nilgiris (banks of the river just below Walaghat) 4000 feet elevation; it is in flower all the year round.

Analysis.

1. A bud, petals removed, showing the inflexed stamens. 2, 3, 4. Front side and back view of an anther. 5. Vertical section of a flower, showing the position of the stamens and the walls or partitions connecting the ovary with the calyx. 6. Transverse section of the ovary near its apex, showing its 4 cells and the 8 cavities formed round it by the 8 connecting partitions. 7. Transverse section of the ovary near its centre. 8. A seed and the embryo. 9. View of the upper side of the leaf, the wart like dots are only visible when the leaf begins to dry, the quite fresh leaf is fleshy and perfectly smooth. 10. Underneath view of a leaf.

Another species of Medinilla (the Triplectrum radicans of Wight and Arnot's Prod.) with exceedingly thick nearly round leaves, is a most common epiphyte in all our western moist forests up to 4000 feet, perfectly covering trees in Wynad, Coorg, Anamallays, Tinnevelly, &c. I have constantly met with it at different seasons during the last fifteen years, but never yet saw it in flower or fruit; it probably flowers in April and May, when I am seldom in the forests, but I have occasionally seen it even in those months.

PLATE CLVII.

ANONACEÆ.

UNONA VIRIDIFLORA. (Bedd.) A gigantic climber, young parts densely aureo-pubescent, branches at length glabrous but warty, leaves membranaceous whitish beneath ovate lanceolate rounded or somewhat cordate at the base, gradually attenuated into a long point at the apex, at length glabrous above, adpressedly pubescent beneath, 3-5 inches long by about 1½ broad, petioles 3-4 lines long, peduncles pubescent 1 flowered axillary or supra axillary furnished with a large broad cordate deciduous bract about their middle, 1-2 inches long, flowers bright green 2½-3 inches long, sepals quite free at the base membranaceous nerved broad ovate subcordate at the base 8 lines long by 6 broad, outer petals 2½-3 inches long by 6-9 lines broad, inner petals a little shorter and narrower, all membranaceous nerved reticulated and silky pubescent.

This very fine species has only been observed on the banks of the Sholayar (3000 feet elevation), in the dense moist forests in the heart of the Anamallays in flower in March.

PLATE CLVIII.

LABIATÆ.

POGOSTEMON TRAVANCORICUM. (Bedd.) Stems erect ascending to 2 feet or more obtusely angled, leaves membranaceous ovate acute, coarsely crenated, the crenatures again serrated above furnished with a few weak hairs at length glabrous about 3 inches long by 2 broad, petioles 1½-2½ inches long, flowers in dense terminal racemes which are 2½-3½ inches in length, petioles 2 lines in length furnished with filiform bracteoles at their insertion on to the raceme, calyx glabrous, corol villous towards the apex on the outside ½ an inch in length, the upper lip of 3 rounded lobes, the lower lip acute; stamens filiform hairy at the base exerted to 6-8 lines beyond the corol, style a little longer than the stamens, stigma of 2 filiform lobes.

On the Attraymallay ghat, Travancore, 4000 feet elevation.

PLATE CLIX.

CASEARIA WYNADENSIS. (Bedd.) A small tree, young parts densely aureo-villous, branches softly pubescent, stipules small linear deciduous membranaceous penniveined, lanceolate, with a long acumination at the apex, or sometimes only acute or obtusely rounded, rather sharply serrated except near the base at length glabrous above except the costa, softly pubescent beneath especially on the costa and main veins, pellucidly punctate and lincolate 4-6½ inches long by 1½-2 broad, petioles softly pubescent 4-6 lines long, flowers small, 6-8 fascicled in the axils, pedicels 2-3 lines long, pubescent, calyx pubescent on the outside, very slightly hairy within ciliate punctate, 5-lobed, stamens 8, rarely only 6, staminodes very hairy, ovary oblong attenuated into a style equalling the stamens in length, both hairy, stigma 4 lobed.

A small tree, very common on the slopes of the Wynad, 2-3,000 feet elevation.

PLATE CLX.

MYRTACEÆ.

EUGENIA? WYNADENSIS. (Bedd.) A small tree or large shrub, young leaves ramuli and inflorescence densely fulvo-tomentose, leaves oblong lanceolate with a long blunt acumination, when old quite glabrous on both sides, minutely dotted near the margin only, 3-3½ inches long by 1-1¼ broad, petioles 3-4 lines long, peduncles supra-axillary 6 lines long, calycine-lobes 4 lanceolate acuminate a little longer than the corol, bracts 2 linear much longer than the sepals, stamens inserted round the edge of the disk, petals with pellucid dots, ovary 2 celled, ovules about 4 in each cell pendulous from the apex. *Bedd. Mad. Lit. Soc. Journ; and Flora Sylvatica, part* xvii.

Common about Devalicottah in the Wynad, elevation 2000-3000 feet, in flower in April. It seems intermediate between Pimenta and Eugenia, having the pendulous ovules of the former and the habit and inflorescence of the latter. I have not seen the fruit.

PLATE No. CLXI.

EUGENIA CALCADENSIS. (Bedd.) A small tree, young shoots, young leaves and inflorescence covered with dense rusty pubescence, leaves opposite, sometimes subalternate coriaceous, not dotted, elliptic to subobovate obtuse at the apex, very rugose on the upper side but glabrous in age except the channelled costa (venation inconspicuous above, slightly prominent beneath, the primary veins joined into a marginal one) 2½-3 inches long by 1-1¼ broad, petioles 3-4 lines long, peduncles axillary solitary about as long or a little longer than the petiole, 2 flowered at the apex rarely only 1-flowered, pedicels 1-1¼ inch long furnished with a subulate bract at the base of each and 2 small narrow linear bracteoles at the apex below the calyx, flowers showy, white, 1-1¼ inches in diameter, calyx lobes rounded about 3 lines long, petals oblong ciliate 6-8 lines long, stigma truncate not larger than the apex of the style, disk suborbicular densely woolly covering the whole of the top of the ovary at the apex of the calyx tube, stamens inserted all over it, ovary 2 celled, ovules numerous attached to the central placenta. *Bedd. Flora Sylvatica, part* xvii.

Calcad hills (South Tinnevelly) 2000 feet elevation, a very beautiful little tree.

Analysis.

1. A young leaf covered with dense down.
2. Upper side of a full grown leaf glabrous but very rugose.
3. A flower bud showing the bracteoles.
4. Full flower petals removed, showing the large woolly disk and the insertion of the stamens.
5. A petal.
6. Anthers.
7. Ovary cut vertically.
8. Ovary cut transversely.

PLATE No. CLXII.

MELASTOMACEÆ.

MEMECYLON AMABILE. (Bedd.) A small tree or large shrub, the young branches acutely 4 angled, young leaves a deep blue color, leaves subcoriaceous not dotted (veins quite inconspicuous pinnate and meeting a looped vein within the margin) opaque deep green above very pale beneath subsessile from ovate to cordato-lanceolate with a gradually attenuated blunt point, 2-3 inches long by 10-14 lines broad, petioles 1 line long or sometimes none, peduncles axillary and terminal solitary or twin slender 6-9 lines long generally simply umbelliferous at the apex, sometimes branched and with several umbels, dilated at the apex into a scaly receptacle, pedicels slender 2-3 times as long as the calyx with a small bract at the base of each, calyx-lobes very small or obsolete, petals rounded, disk plane within, flowers deep blue small crowded, placenta about 5-ovuled. *Bedd. Flora Sylvatica, part* xviii.

South Canara ghats up to 2000 feet elevation.

PLATE No. CLXIII.

MEMECYLON GRACILE. (Bedd.) A small tree or large shrub, young branches obsoletely 4 angled, leaves subcoriaceous ovate with a long gradually blunt acumination (veins pinnate with a looped vein near the margin but all quite inconspicuous) of a bright green on both sides or a little paler beneath, 1½-1¾ inch long by 8-9 lines broad, petioles 1-2½ lines long, peduncles axillary solitary recurved or drooping slender 4-6 lines long bracteated at the apex and 3 flowered, pedicels 2-3 inches long with 2 bracteoles a little above the base, flowers small, calyx white, disk radiately winged within, petals pale blue, placentas 3-4 ovuled. *Bedd. Flora Sylvatica, part* xviii.

Travancore and Tinnevelly ghats. Not uncommon.

PLATE No. CLXIV.

LEGUMINOSÆ.

SOPHORA INTERRUPTA. (Bedd.) A large shrub, branches and petioles adpressedly pilose, stipules and bracts caducous villous, leaves 8-9 inches long, leaflets 9-14 pair with an odd one, oval very emarginate finely reticulated, glabrous above slightly hairy beneath, 10-14 lines long by 6 9 lines broad, petiolules 2 lines long, racemes terminal leaf-opposed shorter than the leaves, flowers few distant and large on pedicels about 6 lines long, petals long clawed, ovary densely sericeous 3-7 ovuled, legume slightly pilose often much interrupted and filiform between the nodes, each of which is completely 4 winged. *Bedd. Flora Sylvatica, part* xv. *p.* xc., *and Analysis of Genera tab.* xii. *fig.* vi.

Vencatagherry-droog near Codoor (Cuddapah district), elevation 2500-3000 feet ; a very beautiful shrub.

PLATE No. CLXV.

TEPHROSIA CALOPHYLLA. (Bedd.) A herbaceous perennial with a woody root and crown, stems glabrous angled or almost winged ascending or spreading 6-8 inches long, stipules subulate rigid coriaceous striated glabrous 4 6 lines long, leaves 1-foliate narrow lanceolate downy when very young soon perfectly glabrous, 3½-5 inches long by 8-12 lines broad, hard coriaceous with a thickened margin and a mucro, primary veins very numerous thick and prominent and much raised on both sides, petioles from 3 lines to 4 inches long flattened and 4 angled articulated at the apex just below the leaf and there furnished with 2 subulate stipels and often a few hairs, no trace of lateral leaflets, racemes terminal elongated flat and winged or acutely angled, pedicels 3-6 lines long pubescent in flower glabrous in fruit, furnished with a subulate bract at the base, calyx and corol slightly pubescent calycine teeth very subulate equal, corol purplish-red scarcely ½ inch long, upper stamen free to the middle, style glabrous, stigma pencilled, legume 2½-2¾ inch long by 2½-3 lines broad crowned with the curved style 6-9 seeded.

I have only found this very curious species on the dry rocky hills above the Guzzlehutty pass on the eastern side of the Nilgiris 3000 feet elevation, its leaves are very beautiful.

PLATE No. CLXVI.

RUTACEÆ.

TODDALIA BILOCULARIS. (WA.) A middling sized very glabrous unarmed tree up to 3 feet in girth, with very dense foliage, diœcious, leaves trifoliate up to 12-14 inches long of which the common petiole is about 4 inches, leaflets entire oblong slightly attenuated at the base, to elliptic, ending in a bluntly pointed acumination, 6-10 inches long by 2-3¾ broad, pellucid-dotted penniveined, primary veins prominent and nearly at right angles with the costa and joined near the margin by a continuous looped vein, petiolules equal in length about ½ inch long, panicles terminal or from the upper axils much shorter than the common petiole, flowers 4-5 lines in diameter greenish-yellow, calyx gamosepalous, in the 2 petaled flowers an entire thickened ring, more or less 3 lobed in the 3 petaled flowers, petals 2-3 very much larger than the calyx more or less concave pellucid dotted slightly imbricate, stamens 6 ; in the male flowers rudiment of the ovary 2 fid, in the female, stamens small effete, ovary large oblong crowned with a very large peltate stigma, 2 celled, cells 2 ovuled, fruit oblong size of a small gooseberry pellucid dotted. Toddalia ? bilocularis, *W.A. Prod. p.* 149. Dipetalum biloculare, *Dalz. Hook. Jour. of Bot.* ii. *p.* 38.

This is common in the Annamallay forests, particularly in the dense moist forests in the interior on the banks of the Sholay ar (a large river) 2500-3000 feet elevation, where it grows to be a tree of considerable size and very beautiful on account of its dense dark green foliage. I found many female trees in flower and fruit last March, but did not succeed in getting male flowers, and I believe the male trees were not in flower ; the analysis which only represents female flowers and fruit, was taken from fresh specimens, 3 petaled flowers were common and in the proportion of 1 to 4 of the 2 petaled ones.

Analysis.

1. A flower bud.
2. Back view of a 2 petaled female flower, showing the entire ring like calyx.
3. Back view of a 3 petaled flower, showing the calyx 3 lobed.
4. A 3 petaled female flower.
5. A petal.
6. A 2 petaled female flower.
7. Anthers.
8. Ovary cut vertically.
9. Ovary cut transversely.
10. Young fruit cut vertically.
11. Young fruit cut transversely.

PLATE No. CLXVII.

MELASTOMACEÆ.

OSBECKIA ALVEOLATA. (Bedd.) A very large shrub 10-15 feet high, branchlets terete or sub 4-angled densely scabrous with coarse brown hair like scales, leaves ovate to ovato-oblong prominently cordate at the base scarcely acute at the apex, very prominently 7-nerved, 3-4 inches long by 1-2 broad, above densely rugose the raised warts each terminating in a long bristle like golden hair, beneath quite honey-combed the raised reticulations very hairy, petioles 4-8 lines long, flowers in 3 short terminal 3 flowered cymes, or the 2 lateral peduncles with solitary flowers, deep purple 1½-2 inches across in full expansion, calyx tube densely covered on the outside with peltate scales each of which is densely covered with long curved hairs which proceed from very swollen bases, deciduous lobes ciliate, hairy along the back and terminating at the apex with a prominent star-like tuft of coarse hairs, petals 5 slightly ciliate at the margins, anthers yellow the connective 2-auricled at the base, style thickened at the apex, stigma capitate subpeltate, fruit calyx quite truncate, capsule 5 celled.

This truly magnificent species I have only met with on the higher ranges of the Anamallays where it is abundant at the outskirts of the sholas at 6-7000 feet elevation, and a mass of bloom in March, no figure could do justice to the beauty of the leaves and calyx.

Analysis.

1. Slightly magnified upper surface of a leaf showing the rugosities each ending in a bristle little hair.
2. Under surface of a leaf showing the raised reticulations and deep cavities between.
3. A flower bud, petals removed.
4. A petal showing the ciliate edge.

5-6. Calyx opened out showing the anthers bent down.

7-8-9. Outside, inside and side view of one of the deciduous lobes of the calyx.

10. Anthers showing the terminal pore and the auricled base of the connective.
11. Ovary, style and stigma.
12. Front and back view of one of the peltate scales of the calyx tube.
13. Ovary cut vertically.
14. The same cut transversely.

PLATE No. CLXVIII.

SONERILA ROTUNDIFOLIA. (Bedd.) Root tuberous globose, leaves all radical orbicular cordate at the base rounded at the apex serrate 5-7 nerved, slightly hairy on the nerves beneath glabrous above, rather firm in texture, purplish beneath, 1-1½ inches or a little more each way, petioles 1-4½ inches long slightly hairy, scapes glabrous or slightly hairy 4-8 inches long bracteated and 3-5 flowered at the apex, bracts small subulate, flowers pink 6-8 lines in expansion quite glabrous, petals obovate with a small mucro at the back. *Bedd. Mad. Lit. Journ.* 1861.

This pretty little species is common on rocks (during the monsoon) on the Anamallays at 4000-6000 feet elevation.

PLATE No. CLXIX.

MYRSINACEÆ.

ARDISIA AMPLEXICAULIS. (Bedd.) A shrub, quite glabrous, branchlets angled, leaves subsessile or sessile and often stem clasping with a slightly cordate base, elliptico-lanceolate, of rather thin texture the pinnate veins prominent beneath, both sides furnished with very numerous raised dots near the margin and numerous minute black dots over the surface of the leaf and occasionally a few of the raised dots also; 5-6 inches long by 1-1½ broad, umbels several in a small terminal panicle, very much shorter than the leaves, pedicels 4-6 lines long slightly elongating in fruit, flowers scarcely 3 lines in diameter, calyx and corol dotted, the former with the segments acute and rather deeply divided, the latter almost rotate with a very short tube, the lobes ovate acute, anthers acute a little shorter than the corol-lobes on short filaments, style slender, drupe globular 4 lines in diameter.

Tirrihoot hills, Wynad, 3-4000 feet elevation.

PLATE No. CLXX.

CELASTRACEÆ.

EUONYMUS SERRATIFOLIUS. (Bedd.) A shrub, quite glabrous, branches terete, leaves scarcely coriaceous more or less sharply and prominently serrated from narrow lanceolate to broad lanceolate tapering at the apex into a blunt point, 3½-4 inches long by

$\frac{3}{4}$-1$\frac{1}{2}$ broad, petioles $\frac{1}{4}$ inch long, cymes axillary generally several together filiform from one-third as long to nearly as long as the leaves, flowers 5 merous, calyx-segments unequal rounded quite entire, petals orbicular, capsule nearly globose with 5 rounded lobes. *Bedd. Flora Sylvatica, part* xii. *p.* lxiv.

Malabar, slopes of the Nilgiris, Carcoor ghat, at elevations about 3000 feet.

PLATE No. CLXXI.

ASCLEPIADACEÆ.

CEROPEGIA FIMBRIIFERA. (Bedd.) Root tuberous depresso-globose, stem erect minutely pubescent, leaves sessile or tapering into a very short peduncle narrow ensiform tapering at the apex, minutely ciliate pubescent above, glabrous beneath except on the midrib, but minutely frosted, 3-6 inches long by 2-4$\frac{1}{2}$ lines broad, peduncles axillary $\frac{1}{2}$-1 inch long nearly glabrous, umbelliferous at the apex about 4 flowered, flowers opening in succession, pedicels nearly as long as the peduncle furnished at the base with a few subulate bracts, calyx segments subulate acute $\frac{1}{4}$ as long as the corol-tube, corol-tube not much swollen at the base, narrowed upwards, segments about as long as the tube with tufts of numerous long purple gland-tipped hairs between the segments which are concealed within the corol until the petals expand, and then hang down like a fringe round the apex of the tube, outer lobes of the staminal corona short sharply bifid and ciliate, inner lobes long ligulate and adnate to the centre of the outer ones, follicles terete slender 3-4 inches long, tube of the flower greenish outside deep purple striated within, lobes of corol pale greenish purple, fringe deep purple. *Bedd. Mad. Lit. Soc. Journ.* 1861, *p.* 53.

Anamallay Hills, on rocky open grassy places on the hills in the vicinity of Toonacadavu, at an elevation of 3000-4000 feet; in its wild state always a small erect plant 6-8 inches high only, brought into a rich garden soil it sometimes becomes a creeper. I have constantly had it in cultivation, and it is a very showy thing.

PLATE No. CLXXII.

CEROPEGIA ENSIFOLIA. (Bedd.) Root tuberous subglobose, stem twining glabrous, leaves very narrow linear tapering at the apex mucronate, furnished above with a few adpressed hairs, below pale and glabrous, 4-7 inches long $\frac{1}{4}$ inch broad, petioles 2-3 lines long, peduncles pubescent simply umbelliferous on elongate and paniculate with several umbels, from $\frac{1}{2}$ as long as to a little longer than the leaves, pedicels pubescent 2-4 lines long furnished with ovate pointed bracts at their base, flowers greenish white segments of the calyx glabrous subulate half the length of the corol-tube, corol-tube ventricose at the base glabrous, lobes as long or a little longer than the tube, exterior lobes of the staminal corona short emarginate ciliate alternate with the inner long ligulate lobes, follicles 6-7 inches long slender terete.

Anamallay hills, rocky places on the Anagoondy range close to Toonacadavu, 3000-3500 feet elevation.

PLATE No. CLXXIII.

CEROPEGIA BREVITUBULATA. (Bedd.) Root tuberous subglobose, stems glabrous twining to a considerable extent over bushes, leaves narrow ensiform gradually attenuated into a point at the apex and into the short petiole at the base very minutely ciliate and slightly scabrous (under the lens) 3$\frac{1}{2}$-5 inches long by 3-4 lines broad, petioles 2-3 lines long, peduncles scabrous from as long to twice as long as the petioles, umbelliferous and bracteated at the apex, bracts subulate, pedicels 3-5 generally longer than the peduncle very slender and scabrous, calyx segments subulate scabrously hairy longer than the tube of the corol, corol about 1$\frac{1}{2}$ inch long, broad oblong to subglobose, the lobes very narrow cohering at their tips and cut down nearly to the base so that there is scarcely any tube, glabrous, greenish yellow on the outside deep purple within, corona rotate furnished with only 5 depressed lobes which are connivent over the gymnostegium, follicles slender terete about 5 inches long by 2 3 lines broad.

This beautiful rather abnormal species appears to be very rare. I have only met with it in one locality on the dry rocky hills above Amerdy (close to Vellore) at about 1000 feet elevation. I collected the tuberous roots but failed in growing them.

PLATE No. CLXXIV.

APOCYNACEÆ.

CHILOCARPUS MALABARICUS. (Bedd.) A lofty woody climber, quite glabrous, leaves elliptic oblong with a sudden rather long and fine acumination, rounded or more or less attenuated at the base, penniveined, the veins close and very prominent and nearly at right angles with the midrib and connected by an irregularly waved vein near the margin, about 5 inches long by 2 or nearly 2 inches broad, petioles 4-6-lines long, peduncles axillary and terminal about 3 times as long as the petioles di-trichotomously cymose towards the apex, all furnished with a sticky gummy substance, flowers numerous whitish 2$\frac{1}{2}$-4 lines long, bracts minute ciliate,

calyx ciliate slightly hairy, segments ½-1 line long, corol-tube slender more or less contracted at the apex just below the lobes, the lobes broad, anthers a little above the middle of the tube, filaments very short and hairy, or almost obsolete and a few hairs on the corol tube at their insertion, style elongate or obsolete, stigma mitriform thickened, with a terminal apiculation, fruit not seen.

Malabar on the Carcoor ghat 2000 feet elevation, South Canara in dense moist forests in the plains. My South Canara specimens have an obsolete style and obsolete filaments and rather larger flowers but they are undoubtedly the same species.

PLATE No. CLXXV.

GESNERIACEÆ.

DIDYMOCARPUS MEMBRANACEA. (Bedd.) Leaves all radical very delicately membranaceous, from obliquely cordato-ovate to cordato-lanceolate quite entire rather densely scattered over or both sides with long white pellucid hairs, 3-4 inches long by 1½-2¼ broad, venation penninerved very inconspicuous above, petioles 2½-4 inches long densely covered with transparent scales and hairs. Scapes considerably longer than the leaves (10-12 inches) sparingly furnished with hair-like scales racemose towards the apex or for about one-third down, flowers 10-12 lines long pale blue, calycine-segments linear acute half or more than half as long as the corol-tube ciliate and hairy, corol-tube subinfundibuliform glabrous, lobes 5 rounded, anthers slightly hairy, fruit 1-1½ inches long finely apiculated glabrous.

A most delicate species apparently very rare, I have only met with it in one place on the South Travancore ghats, moist rocks, Pachemallay (2000 feet elevation).

PLATE No. CLXXVI.

SABIACEÆ.

SABIA MALABARICA. (Bedd.) A glabrous climber, leaves from oblong to lanceolate with a gradual acumination ending in a mucro-coriaceous with the margin thickened, 3-4½ inches long by 1-2 broad, primary veins looped well within the margin and the reticulated veinlets very prominent on the under side, petioles ½ to 1 inch long, racemes axillary few flowered, or in axillary leaf-bearing panicles, flowers very small hermathrodite pentamerous, calyx minutely hairy, styles 2, petals oval, stamens shorter than the petals, filaments flat, ovules superposed, drupes flat reniform scrobiculate.

Anamallay forests, 3000-4000 feet elevation.

PLATE CLXXVII.

ACANTHACEÆ.

ASYSTASIA TRAVANCORICA. (Bedd.) A large woody erect shrub 6-8 feet high, young branches terete strigosely hairy, leaves linear lanceolate, punctate and lineolate and sparingly hairy on the costa and veins, 3-4½ inches long by ½-¾ inch broad, petioles ½ to 1 inch long, racemes terminal often more or less branched strigose, bracts subulate, pedicels slender 3-6 lines long calyx minutely puberulous deeply 5 cleft, segments subulate, corol slightly puberulous or glabrous deep violet or white, about 1½ inch long, tube suddenly narrowed at the base swollen upwards, limb subcampanulate, lobes subequal rounded, anthers included, their inner lobes considerably the longer, all the lobes bifurcate at the base, ovary and style slightly hairy, stigma long linear slightly truncated and 2 lobed at the apex.

This differs from all our other S. Indian species in being a woody shrub, it is very abundant in the beds of rivers in the Paupanassam and Calcad hills in South Tinnevelly, and on the South Travancore hills, but I have never seen it as far north as Courtallum ; it is by far the handsomest of the species. I introduced it into Madras some years ago, and it is now common in most gardens in Madras and Bangalore. It grows well from seed ; the flowers are generally of a very beautiful deep violet purple, but one variety has white flowers.

PLATE No. CLXXVIII.

PHLOGACANTHUS GRANDIS. (Bedd.) A large shrub 8-12 feet high, glabrous, leaves 8-18 inches long, lanceolate broadest above the middle and very gradually attenuated down to the base, rather suddenly attenuated at the apex and acute glabrous on both sides obscurely crenated, primary pinnate veins prominent, petioles 1-2 inches long, panicles axillary from as long to somewhat longer than the leaves, the rachis very flat and winged, ramifications rather distant and few flowered, the lowest pair of bracts on the rachis large and leafy, smaller upwards, flowers crimson 10-12 lines long, bracteoles at the base of the pedicels subulate, those below the calyx stem clasping and ovate, calyx or corol slightly puberulous, the former of 5 equal subulate segments, corol tube very short, upper lip entire concave scarcely emarginate at the apex prominently auricled at the base just at the apex of the tube, lower lip shortly 3 lobed slightly auricled at the base hairy and rough inside at the base along the centre, lobes not more than a 5th the total length of the lip,

anthers 2, filaments quite distinct inserted on the lower lip at the centre of the tube, slightly hairy particularly at their dilated bases. Style slightly hairy, stigma capitate very small, ovary many seeded.

This very fine large species only inhabits the ghats in the most southern parts of Tinnevelly and Travancore at 3000-4000 feet elevation ; it is very abundant in the dense moist forests above Paupanassam and Calcad, and is in flower in August and September.

PLATE No. CLXXIX.

PHLOGACANTHUS ALBIFLORUS. (Bedd.) A large shrub 6-10 feet high, glabrous, leaves lanceolate with rather a long acumination subentire or obscurely crenately waved, glabrous above, very sparingly hairy on the costa, veins and veinlets beneath, about 5 inches long by 1½ to 2 broad, panicles shorter than the leaves corymbiform, bracts and bracteoles small subulate, flowers pure white 14-15 lines long calyx and corol sparingly puberulous, the former of 5 equal subulate segments, corol tube very short upper lip concave entire or very slightly emarginate at the apex, auricled on both sides at the base on the outside just at the apex the tube, lower lip auricled at the base shortly 3 lobed at the apex, hairy inside at the base in the centre, anthers 2, filaments quite distinct inserted on the lower lip at the centre of the tube slightly hairy, much dilated below articulated near the apex, and quite black above the articulation, style slightly hairy ; stigma capitate very small, ovary many seeded, capsule terete striated 2½-2¾ inch long by 2 lines broad many seeded, seeds scrobiculate.

South Tinnevelly mountains 3000-5000 feet elevation, it comes further north than the last species and is abundant at the Chinna kal rày on the ascent to the General's hill near Courtallum, in flower during the rainy season. It is not so common as the last, but I have collected it in several places to the south of Courtallum. I have given very full description and careful analysis (drawn from fresh specimens) of these 2 interesting species, as they are perhaps not true Phlogacanthi though agreeing technically with the genus, and I do not know where else to refer them ; the articulated filaments of *albiflorus* are very peculiar, but there is no trace of this articulation in *grandis*.

PLATE No. CLXXX.

EUPHORBIACEÆ.

CROTON MALABARICUM. (Bedd.) A tree 20-30 feet high, the whole plant very silvery, leaves alternate oblongo-ovate ovate to rhombeo-ovate acuminate, entire, above in age very sparingly covered with grey stellate scales or rarely quite glabrous, beneath very silvery and densely matted with scales, primary veins 6-7 on each side raised and prominent beneath, glands 2 very small immersed ones at the base on the underside, 2-6 inches long by 1-3 broad, petioles 1-2 inches long silvery but also with rusty scales, stipules setaceous 6-9 lines long, racemes terminal solitary or 2-3 together about 2 inches long, the upper half male, the lower half female silvery as are the flowers, disk of 5 lobes present in both sexes, but very inconspicuous in the dense wool. *Male* petals less than a third the size of the sepals woolly, stamens 10. *Female*: no petals, styles 3 each 2-cleft to nearly the base the arms filiform blackish glabrous or subglabrous in age, fruit obovoid fusco-stellate about 1 inch long by 8 lines wide slightly raised above the calyx on a stalk 1 line long, (base of the central column which runs up between the cocci and which is persistent after they fall off), fruiting calyx scarcely enlarged.

This tree is common in all our western forests up to 4000 feet elevation; it has the same silvery appearance as *reticulatum* (hypoleucos, *Dalz.*) but is a tree instead of a small shrub, has much larger leaves and very different glands, fewer stamens, larger fruit and different style; it answers very exactly to Roxburgh's description of C. bicolor, except in its shorter racemes, but I dare not give it that name as that species is from Sumatra only, but I should not be surprised if it turns out to be identical with it. Figure A is the fruit, life size.

PLATE No. CLXXXI.

TRIGONOSTEMON NEMORALIS. (Thw.) A shrub or small tree, the young angled ramuli, the young leaves and inflorescence sericeo-pubescent soon glabrous; stipules subulate 2-3 lines long subpersistent, petioles 2-3 lines long pubescent bidenticulate at the apex, leaves penniveined subglabrous 3-6 inches long by 1-1¾ inches broad lanceolate acuminate mucronulate crenato-denticulate, racemes many flowered shorter than the leaves floriferous from the base, the flowers and pedicels about equal in length, petals dull red oblong entire 2-3 times longer than the unequal lobes of the calyx, anthers 3-2, anther-cells subparallel a little distant, at the apex of the rounded connective, female flowers a little larger than the male 6-7 lines in expansion, ovary hispid. Style-lobes 3 short spathulate emarginate reflexed, capsules nearly ½ inch diameter muricate pilose of 3 rounded cocci, seed spherical 3 lines in diameter a little keeled on the back, testa smooth marbled. *Thw. En. Pl. Zey. p.* 277;—*DC. Prod.* xv. 1108.

Tinnevelly mountains, south of Courtalum, common in the moist forest at 2000-3000 feet elevation (Ayen Covil pass, banks of the Garna river, &c.); Ceylon, central provinces, 2000 feet elevation.

PLATE No. CLXXXII.

CYCLOSTEMON MALABARICUS. (Bedd.) A large tree, young branches densely aureo-tomentose, leaves entire membranaceous oblong rather suddenly acuminated at the apex unequal sided at the base (one side attenuated, the other rounded) tomentose on both sides when young at length glabrous above except the costa, pilose beneath on the costa and veins, 8-9 inches long by 2½ broad primary veins prominent on the under side 7-10 on each side, petioles about 3 lines long, male flowers densely fascicled on the older branches, pedicels about 3 lines long aureo-tomentose, calyx-segments 4 broad cucullate imbricate densely aureo-tomentose on the outside glabrous within, stamens very numerous in 2-3 rows round a tomentose cup-like disk, anthers introrse, rudiment of ovary none. Female flowers not seen, fruit solitary along the older branches on pedicels ½ inch long, about 1 inch long by ¾ inch broad densely tomentose crowned by the 2 reniform stigmas.

Tinnevelly ghat forests, 3-4000 feet elevation (near the Parapett Coffee estate.)

PLATE No. CLXXXIII.

MELASTOMACEÆ.

MEDINILLA RADICANS. (Don ?) A perfectly glabrous fleshy epiphyte, branches terete fleshy, leaves opposite very fleshy suborbicular about 1½ inches long by a little less in breadth, 3-nerved but the lateral nerves very inconspicuous on account of the fleshy nature of the leaves, petioles reddish about 3 lines long, peduncles axillary 1-flowered 6-8 lines long, often with 2 minute bracteoles a little above the base, flowers 14-15 lines long and showy. Calyx turbinate truncated entire very fleshy with a thickened ring inside from which the stamens arise, petals 4 pure white obliquely obovato-spathulate. Stamens 8 alternately shorter or sometimes subequal, rarely 4 hooked staminodes present 1 opposite each of the larger stamens, filaments filiform, anthers 5-6 lines long curved attenuated at the apex, thickened below and furnished at the base in front with 2 spurs, the 4 shorter ones with a long single descending

posterior spur and the 4 longer shortly spurred or truncated behind, ovary with 8 wings or partitions as in M. Malabarica. Style slender, stigma very small truncate, berry turbinate 4-celled.—Triplectrum radicans, *Don. WA. Prod.* 324 ?

A beautiful species very abundant in the Wynaad and almost throughout our western moist forests between 2000 and 3500 feet elevation ; it flowers in March, but I believe very rarely ; it differs so considerably from the plant described as Triplectrum radicans in Wight and Arnott's *Prodromus*, that it may not be their plant, though I believe it to be ; it is so fleshy and shrivels up so completely in drying that it could hardly be described except from fresh specimens or from specimens in spirits. The drawings and analysis were taken from living plants collected on trees at Luckady in the Wynaad. I only found the 4 sterile stamens present in one flower out of some 8 or 10 dissected ; they were not alternate with the other 8 stamens, but opposite to the longer ones. I have represented one of them in the drawing.

PLATE No. CLXXXIV.

DIPTEROCARPEÆ.

HOPEA MALABARICA. (Bedd.) A very large tree, with a most valuable hard timber, bark blackish peeling off in long strips which become recurved and hang all round the trunk ; young shoots, petioles, panicles, and calyx glabrous, leaves oval or ovate with a longish acumination glabrous on both sides, primary veins distant very prominent beneath 3 or rarely 4 or very rarely 5 on each side, one or two of them furnished beneath with very large glabrous glands in the axils, 4-6 inches long by 2-2¾ broad, petioles 6-9 lines long, panicles from the old axils 3-4 inches long, flowers pedicelled rather distant sometimes secund or subsecund but not always, yellowish white about 5 lines long (much larger than in parviflora,) calyx glabrous but minutely ciliate, petals very hairy outside on the right hand half, the inner half which is imbricated whilst in bud glabrous, quite glabrous inside, with a twisted flattened prolongation at the apex, stamens 15 alternately single and double, filaments very flat below with a long apiculation below the anther, anthers with a long glabrous setaceous bristle more than twice their length. Stigma with 3 very minute points, (under the lens), fruit glabrous 2 of the sepals enlarging into wings 3-3¼ inches long by 1-1¼ broad prominently 10-12 veined, a 3rd sepal occasionally somewhat enlarged.

A very large tree, Carcoor ghat, (Wynaad) and Anamallay forests ; in flower in February and March, called Kallu in Malabar. It is allied to Hopea parviflora but has glabrous panicles and much larger flowers and fruit, and the leaves differ considerably generally having only 3 very prominent lateral veins in this (rarely 4, very rarely 5) with large glands only in 1-2 of the axils, whereas in parviflora there are 5-9 veins (generally 7-8) not so prominent and smaller glands in the axils of almost all, the fruit-wings are red.

PLATE No. CLXXXV.

LEGUMINOSÆ.

DERRIS EUALATA. (Bedd.) A gigantic creeper, young parts minutely sericeous, leaves alternate 10-14 inches long 6-9 inches broad, leaflets rather coriaceous 3-4 opposite pair and a terminal one, oval to oblong with a very blunt point at the apex, glabrous on both sides, rather shining above pale beneath, 2½-5 inches long by 2-2½ inches broad, penniveined ; petiolules 3-4 lines long, the terminal one 10-16 lines long ; panicles terminal and axillary elongato-thyrsoid aureo-tomentellous up to 1 foot and even more long, the upper branchlets not much shorter than the lower, flowers rather numerous white 5-6 lines long the lower ones of each branchlet opening first and falling off long before the upper buds open, pedicels filiform 2-3 lines long, vexillum without callosities and with a short claw, stamens 9 and 1, the vexillum one quite free, ovary villous, ovules 4-5, style villous, stigma minute, legume narrow oblong flat apiculate 4-5 inches long by 1-1¼ inches broad 1-3 seeded, reticulated, very prominently winged all round, the wings 3-3½ lines broad subcoriaceous, the upper suture prominently keeled and slightly winged,

Very common in the plains of South Canara and Malabar and about the foot of the Coorg ghats ; it is closely allied to and perhaps not distinct from D. thyrsiflora, *Benth. Linn. Soc. Journ. vol.* iv. *Suppl. p.* 114, but that species is only recorded from Eastern Bengal and the Archipelago. Pongamia ovalifolia, *Wight Icones* 328, may also be a bad figure of this species. Some of my specimens have almost as small leaves, and if the figure of the inflorescence is taken for the base of the panicles (not for racemes along naked branches as described), it may well be this species ; at any rate, I have met with no other plant corresponding to Wight's figure.

PLATE No. CLXXXVI.

ANACARDIACEÆ.

SEMICARPUS AURICULATA. (Bedd.) A good sized glabrous tree, diœcious, leaves oblanceolate with a small blunt acumination very gradually attenuated at the base and there furnished with 2 rounded lobes just above the petiole, glabrous of a dull green color, costa slightly rusty, margin membranaceous, about 7 inches long by 1¾ inches broad above the middle, venation prominent,

petioles 2-3 lines long, *male* flowers very small yellowish-white very numerous in very compound glabrous panicles which are longer than the leaves, flowers generally 3-merous but often 4-merous, calyx slightly pubescent, petals veined glabrous, abortive ovary very small round with a turbinate apex, the *female* panicles (on a separate tree) much shorter than the male and few flowered, flowers much larger (more than twice as large as the male) greenish yellow, 4-5-merous, calyx very slightly pubescent, petals prominently veined (veins black), stigmas large, drupe obliquely obovate about 6 lines long by 4-5 lines broad supported on a short broad cup-like hypocarp. *Bedd. Fl. Syl. letter-press Pl.* ccxxxii.

Travancore and Tinnevelly mountains up to 2500 feet elevation, very common throughout the new Pooleary pass between Quilon and Courtallum, also at Panalur at no great elevation on the Travancore side of the ghats. The male tree is very showy when in full blossom, being a perfect mass of yellowish white flowers; the female tree is inconspicuous, the flowers being few and greenish in color; the tree flowers in November.

PLATE No. CLXXXVII.

RHAMNEÆ.

COLUBRINA ? TRAVANCORICA. (Bedd.) A large shrub unarmed, young parts and young leaves beneath and costa above densely aureo-pubescent, in age the branches are slightly pubescent, leaves alternate but approximated in pairs (or subopposite) oblong with a longish rather blunt acumen rounded or subcordate at the base serrate, 3-nerved at the base penniveined above, primary veins 4-5 on each side subglabrous in age or the costa and veins slightly pubescent, 3-5 inches long by 1½-2 broad, petioles 4-5 lines long, stipules long subulate soon deciduous, flowers small in short pedunculate axillary cymes a little longer or twice as long as the petiole, fruit (not mature) 6 lines in diameter globose slightly depressed at the top.

Travancore plains between Cotacarray and Panalur, in flower and fruit in November.

PLATE No. CLXXXVIII.

ROSACEÆ.

PARINARIUM TRAVANCORICUM. (Bedd.) A small very graceful tree, young parts with silky adpressed greyish white pubescence, leaves membranaceous or submembranaceous lanceolate or linear-lanceolate with a generally bluntish acumen entire glabrous in age except the costa beneath which is often silky, 4-5 inches long by 1-1¼ broad, furnished with 2 inconspicuous glands at the base of the lamina beneath, primary veins numerous, veinlets much reticulated and prominent beneath, petioles 2-3 lines long, stipules (fig. A.) 4-5 lines long linear-lanceolate silky deciduous, racemes terminal simple or cymosely branched, 3-4 inches long, silky pubescent, furnished with numerous lanceolate or linear-lanceolate bracts, calyx segments ribbed down the back acuminate or acute, petals oval or oblong glabrous, veined; stamens 12-10 unilateral quite free at the base, filaments twice as long as the calyx-tube, ovary hirsute 2-locellate.

I have only found this very graceful tree on the Travancore mountains about 2000 feet elevation, near the Rosemallay Coffee estates not far from Courtallum; it is allied to P. Indicum, but more pubescent and with much smaller narrower leaves.

PLATE No. CLXXXIX.

RUBIACEÆ.

TIMONIUS JAMBOSELLA. (Gærtn.) A very small tree or large shrub, young parts and young leaves strigosely hairy, leaves elliptic lanceolate acuminate entire, 3-7 inches long by 1¼-2½ broad, glabrous in age except the costa beneath and the hairy glands in the axils of the main veins, petioles 6-9 lines long, stipules hairy on the back ovate acuminate 3-4 lines long, diœcious, male and hermathrodite, flowers yellowish-white, lobes fleshy subimbricate, *male* peduncles axillary opposite springing from within the stipules, ½-1½ inch long bifurcate with a flower in the fork, the branchlets few-flowered, flowers subsecund, corol infundibuliform hirsute outside sulcate within, stamens 4 attached by the middle of the back by a very short filament which does not extend nearly to the base of the lower lobe, style hairy especially towards the apex, stigma minute entire, *hermathrodite* peduncles axillary 1-flowered 1½ inches long, flower articulate bibracteolate at the base, corol lobes more fleshy than in the male each lobe most prominently 3-sulcate on the inside, filaments much longer than in the male and extending below the lower lobe of the anther, ovary about 12-celled, style 2-cleft at the apex each arm with 2 entire stigmas. Empyrene, *WA.*

Ceylon, up to 5000 feet, very common about Badagam in the south of island, also in the peninsula? Thwaites describes the stigma of the male flower as minutely bifid, and the hermathrodite stigmas as 12 (i. e., the 4 lobes each 3 cleft), but I do not find this in any flowers that I dissected; the 4 stigmas appear to be quite entire.

PLATE No. CXC.

HEDYOTIS CAPITATA. (Bedd.) A woody nearly glabrous shrub 5-8 feet high, young ramuli somewhat angled and with the stipules and peduncles slightly hairy (under the lens), leaves ovate slightly acute very coriaceous, $1\frac{1}{4}$-$1\frac{3}{4}$ inches long by $\frac{3}{4}$-$1\frac{1}{4}$ inch broad, very prominently 7-9 nerved from the base, nerves channelled above, raised beneath, petioles very flat and dilated 1-2 lines long. Stipules broad ovate glanduloso-fimbriate, peduncles terminal and from the upper axils 1-$1\frac{1}{2}$ inches long, flowers 4-merous small and inconspicuous densely capitate in globose ($\frac{1}{2}$ inch diameter) heads which are furnished at the base with 2-4 small sessile leaves, calyx and corol strigose with shining hairs, bracteoles glanduloso-fimbriate. Ovules 6-8 in each cell attached to a fleshy placenta which is erect from the lower part of the axis.

I have only found this very distinct species on the mountains just above Palghat at an elevation of 6500 feet, abundant in open grassy places.

PLATE No. CXCI.

GERANIACEÆ.

IMPATIENS BALLARDI. (Bedd.) Herbaceous weak suberect, 1-$1\frac{1}{2}$ feet high, stems glabrous often rooting between the leaves, leaves alternate and opposite ovate acute, incurved-setaceo-dentate and furnished near the base on the margin with pedicelled glands, 1-2 inches long by $\frac{1}{2}$-1 inch broad, above furnished with a few weak very inconspicuous hairs on the veins, beneath glabrous and much paler, primary veins 3-4 on each side, petioles 3-7 lines long, peduncles solitary terminal or from the upper axils 2-$3\frac{1}{2}$ inches long subglabrous 5-8 flowered at the apex, pedicels slender elongate, flowers $\frac{3}{4}$ inch long, vexillum hooded slightly keeled at the back with a rounded point at the apex, alæ spreading, the lower lobe very much larger than the upper, labellum attenuated into a long spur gibbous at the middle, capsule ovate swollen subglabrous 3 lines long 7-10 seeded, seeds with weak hairs.

Travancore mountains, on the ghat up from Cottayam to Peermede, and about Peermede 2-3500 feet elevation, allied to I. Goughii, but with much longer flowers and differently shaped petals.

PLATE No. CXCII.

MELIACEÆ.

AGLAIA MINUTIFLORA. (Wight.) A good sized tree, densely covered with stellate down, leaves unequally or rarely equally pinnate, up to more than 2 feet long by 1 foot broad, leaflets 4-6 pair, in age glabrous above except the costa, densely stellato-downy underneath, oblong to lanceolate with a long fine acumination, slightly and irregularly toothed or subentire, 3-6 inches long by 1-2 broad, primary veins prominent 10-14 on each side. *Male* panicles axillary very large and very compound, from much shorter than to about as long as the leaves, flowers very numerous very minute $\frac{1}{3}$ a line in diameter, stamens 5 exserted beyond the nearly entire staminal tube, calyx hairy, petals glabrous, female flowers not seen, fruit densely stellato-downy, about 1 inch in diameter.—Aglaia polyantha, *Bedd. in. Distrib.*

Travancore hills 2-3500 feet elevation, Asambu hills South Travancore, and Peermede North Travancore, also on the Anamallays (Nelliampathy). I have only male flowers, though plenty of specimens of the hermathrodite tree in fruit. The figure represents portion of a male panicle in very young bud. Specimens sent to Kew were named Milnea minutifolia, *Wight*, probably only a manuscript name, as I cannot find it described in any work; it it a very handsome tree, particularly when young.

PLATE No. CXCIII.

BIXINEÆ.

ABERIA GARDNERI. (Clos.) A tree, 16-20 feet, unarmed, branches terete tuberculate, young ones tomentose, leaves ovate oblong or oblongo-lanceolate acuminate subobtuse at the base, entire or dentato-serrate, above pubescent, beneath tomentose, about 4 inches long by 2 broad, petioles about 4 lines long, costa and primary veins reddish, male peduncle short often twin, pedicels 10-20 umbellate about 4 lines long pubescent, calyx-lobes lanceolate acute pubescent, filaments filiform equalling the segments of the calyx, female pedicels 1-3, calyx-lobes as in the male, ovary densely pubescent subglobose, styles diverging $1\frac{1}{2}$ lines long pilose, berry about 1 inch in diameter. *Clos. in An. des Sc. Nat. Ser.* 4, viii. *p.* 236;—*Bedd. Flora Sylv. p.* xvi. Analytical pl. ii. Roumea hebecarpa, *Gard. in Calc. Journ. of Nat. His. vol.* vii. *p.* 9;— *Thw. En. Pl. Zey. p.* 18 *and p.* 400.

Ceylon, called Katambilla; the acid fruit is eaten.

PLATE No. CXCIV.

ERYTHROSPERMUM PHYTOLACCOIDES. (Gard.) A middling sized tree 20-30 feet, branches glabrous terete, leaves alternate rather distant oblongo-lanceolate acuminate acute at the base, very glabrous on both sides, shining above paler beneath, entire or obscurely serrate reticulated with prominent veins, 3½-8 inches long, 1½-3 inches broad, petioles 3-8 inches long, sulcate above, swollen at the base and apex, stipules minute lanceolate, racemes many-flowered paniculate terminal or axillary, about equalling the leaves, peduncles glabrous ; pedicels 2-3 lines long 3 bracteolate at the base, sepals 5 white tinged with red, ovate obtuse concave about 2 lines long, petals white ovato-oblong obtuse ciliate when very young, equalling the sepals, anthers saggitate, ovary oblong glabrous stipitate, capsule globose 3-5 lines in diameter, 3-4 valved nearly to the base, 1-few-seeded. *Gard. in Calc. Journ. of Nat. His. vol.* vii. *p.* 11 ; —*Thw. En. Pl. Zey. p.* 18 ;—*Bedd. Fl. Syl. l. c.*

Ceylon, up to an elevation of 1500 feet.

PLATE No. CXCV.

ACANTHACEÆ.

STROBILANTHES NEILGHERRENSIS. (Bedd.) A large shrub, stems subtetragonal hispid as are the leaves on both sides and the petioles with long patent shining-white jointed hairs, leaves somewhat papillose on both sides and at the margin ovate to elliptic quite rounded at the base or attenuated into the petiole acuminate serrate lineolate, 4-7 inches long by 1½-3 inches broad, primary veins 4-8 on each side, petioles ½-2¼ inches long, spikes terminal and axillary, peduncles 1½-4 inches long leafy bracteated and few-flowered at the apex, calyx 5-cleft ½ down, segments long linear, 4 equal, the 5th a little longer hirsute and ciliate as are the bracts, corol pure white hairy outside and within 1½ inch long, the lower ½ inch of the tube suddenly narrowed and very slender, lobes rounded emarginate equal, stamens 4, two much shorter, all on a short tube, filaments very hairy, style hairy, stigma bent, ovary very hairy at the apex.

A common species as I have specimens from the west slopes of the Nilgiris, the Pulneys, Coorg, Palghat hills and Balarangams. *Fig.* 1, upper surface of a leaf, lineolate and hairy, the hairs 1-2 jointed—2, leaf under surface—3, portion of a petiole hairs 5-6 jointed—4, a hair from the petiole.

Dr. Anderson referred my specimens to his S. papillosus, but I have lately received a fragment of that plant from Kew, and it is identical with a species which I have found only at Ootacamund, and which is quite distinct from this,—this papillosus is very nearly allied to S. Perrottetianus, *Nees.*, (so well figured by Wight, pl. 1513) but is much less hairy and far more scabrous. Neilgherrensis is far more hairy than either of them and has white flowers.

PLATE No. CXCVI.

STROBILANTHES PARVIFLORUS (Bedd.) Shrubby erect 5-6 feet high, stems terete or sub-tetragonal glabrous, leaves lanceolate attenuated into the petiole acuminate coarsely serrate, glabrous on both sides except a few setæ on the costa and veins above, very densely lineolate above (hence somewhat scabrous) paler and smoother beneath and less lineolate, 6-7 inches long (with the petiole) and about 2 inches broad, primary veins much raised above 6-7 on each side, petioles 6-18 lines long slightly winged sometimes woolly in the axils, spikes axillary or from the old axils 1-3-inches long narrow linear densely imbricate with small ovate bracts more or less densely furnished with long cottony wool which is generally soon deciduous, bracts ovate 4-5 lines long and furnished as are the bracteoles and calyx with gland tipped hairs, bracteoles 2 linear a little shorter than the calyx-segments, calyx-segments subequal or one of them a little longer, all linear, corol white 8-9 lines long glabrous on the outside the lower half of the tube attenuated and very narrow, the upper half campanulate, lobes entire rounded glabrous or a little hairy inside, stamens 4, filaments furnished with very long shining hairs, the inner pair a little shorter, in the bud all monadelphous (on a stamen tube) or sometimes diadelphous, in age always diadelphous. Style long glabrous, stigma subentire or with a minute furcation below the long setaceous lobe, capsules very slightly hairy.

Coorg, about Kiggatnad 3000 feet elevation, also in South Canara. Fig. 1 shows the upper surface of the leaf densely lineolate and with a few setæ on the costa and veins ; fig. 2 is a young bud opened.

PLATE No. CXCVII.

STROBILANTHES GOSSYPINUS. (T. And.) Shrubby erect, stems tetragonous covered with much cottony down, leaves ovate to broad elliptic acute or acuminate entire, above glabrous in age but densely silky when young and sometimes in age at the base only, densely matted with white cottony down beneath, 4-7 inches long by 2-2¾ broad, petioles 1-1½ inches very woolly, spikes densely cottony axillary and terminal 3-6 inches long, the lower ones branched, bracts lanceolate densely cottony outside glabrous and shining

within, calyx segments linear equal a little larger than the linear bracteoles, all pubescent outside glabrous within, corol 16-17 lines long obliquely infundibuliform suddenly contracted at the base into a very narrow curved tube 3 lines long, pubescent outside and in a broad line down the centre within, stamens 2, filaments very hairy, style long nearly glabrous, stigma oblique, ovary hairy at the apex. *T. Anders. Journ. Linn. Soc. vol.* ix. *No.* 40 *p.* 466.

Very common about Sisparah on the west side of the Nilgiris, 4-5500 feet elevation, and I have specimens from other localities on our western mountains; it is very rarely to be found in flower, as it apparently only flowers on reaching maturity (6 or 7 years growth), and then dies; it flowered in October 1869.

PLATE No. CXCVIII.

STROBILANTHES PANICULATUS. (T. And.) A rather delicate shrub 5-6 feet high, stem erect terete glabrous, leaves membranaceous lanceolate with a long acumination, the margin subentire or obscurely crenated glabrous on both sides but very densely lineolate over all the lamina and veins, 4-6½ inches long by ¾-1½ inches broad, petioles 4-10 lines long, panicles terminal elongate linear oblong lax at length filiform softly puberulous and also more or less furnished with long white shining simple or very minutely glandular hairs, branchlets opposite short simple or branched furnished with a pair of bracts at the base, the lower bracts about 1 inch long linear glabrous but lineolate, the upper gradually smaller and more ovate softly puberulous and furnished with white glandular hairs, flowers opposite the pedicels filiform hairy and with a pair of bracts at the base (1 to each pedicel), bracteoles generally none rarely present and very minute, calyx cleft to nearly the base into 5 linear subulate hairy segments, 4 equal the 5th much longer (6 lines in length), corol pink 1½ inch long subinfundibuliform and rather curved very finely hairy on the outside, and within furnished with longish hairs down the centre very membranaceous, lobes short rounded rather emarginate, stamens 4 on a very long thin tube, one pair much shorter, stigma 2-cleft 1 division very short the other elongate. *Anders. Journ. of the Linn. Soc. vol.* ix. *No.* 40 *p.* 483? S. rubicundus, *And. in En. Il. Zey. p.* 229 (not *Nees.*)

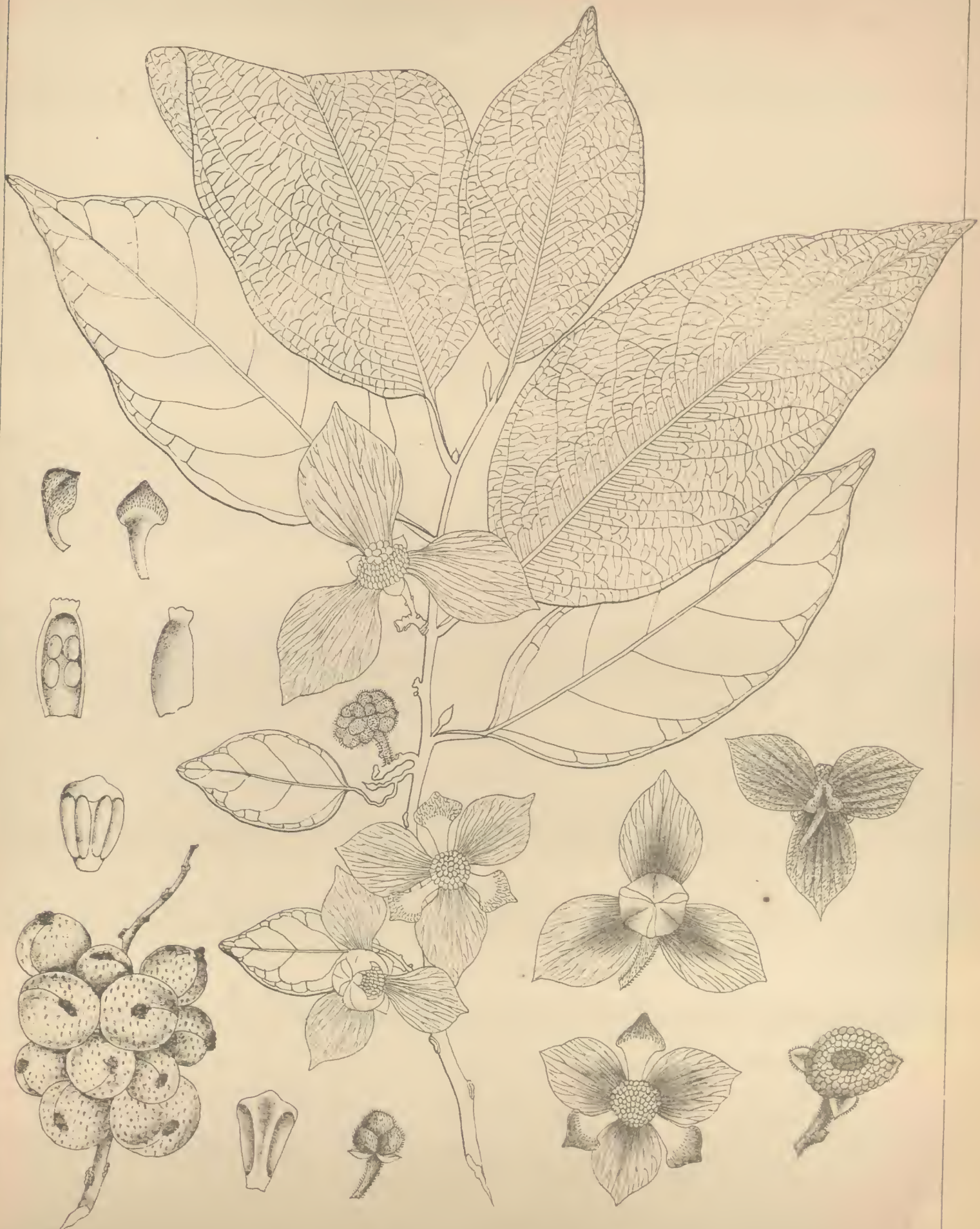
Wynaad and Coorg, 2000-3000 feet elevation, common; a very beautiful species. Specimens sent to Dr. Anderson were referred by him to his Ceylon *paniculatus*, which I have not seen, but my plant differs much from his description; if distinct it may be called S. Wynadensis, under which name I originally distributed specimens.

PLATE No. CXCIX.

STROBILANTHES BOLUMPATTIANUS. (Bedd.) A large shrub up to 15 feet high, branches 4-sided more or less scabrous, leaves broad lanceolate or ovate acuminate shortly attenuated into the petiole serrate, in age very sparingly hairy on the costa veins and veinlets, on both sides the hairs large shining white and conspicuous (when young much more densely hairy) lineolate above, pruinoso-dotted beneath, primary veins 6-7 on each side, 5-14 inches long by 2½-5 broad, petioles more or less hairy, spikes axillary or terminal or from the old axils globose or oblong, 2-4 inches long by nearly as broad, bracts large densely imbricate orbicular coarsely serrate about 1½ inch each way, more or less hairy on both sides, and more or less ciliate prominently veined, bracteoles 2 linear lanceolate ciliate and sparingly hairy, calyx about as long as the bracteoles cleft to almost the base, segments much imbricate veined and prominently costate equal linear-lanceolate ciliate and hairy, corol campanulate slightly exceeding the bracts, brown in color glabrous or subglabrous, lobes entire, stamens 4, filaments thick equal in length joined into a short tube at the base, style rather short, stigma oblique, capsule oblongo-ovate just equalling the calyx glabrous or (under the lens) very minutely puberulous.

I have only found this splendid species on the Bolamputty hills near Coimbatore in moist forests above the Muti kolam, 4500-7000 feet elevation; it flowers every year.

PLATE No. CC.



Cruz del Sur, Ltd.

Mitrephora grandiflora (Bedd.)

Dumsky, Lith.

Coundoo del.

Glyphopetalum grandiflorum (Bedd.)

Dumphy, Lith.

Govindoo, del.

Nephelium stipulaceum (Bedd.)

Dumphy Lith.

Govindoo del.

Lanzium Anamallayanum (Gamble)

Dunphy, Lith.

Govindoo, del.

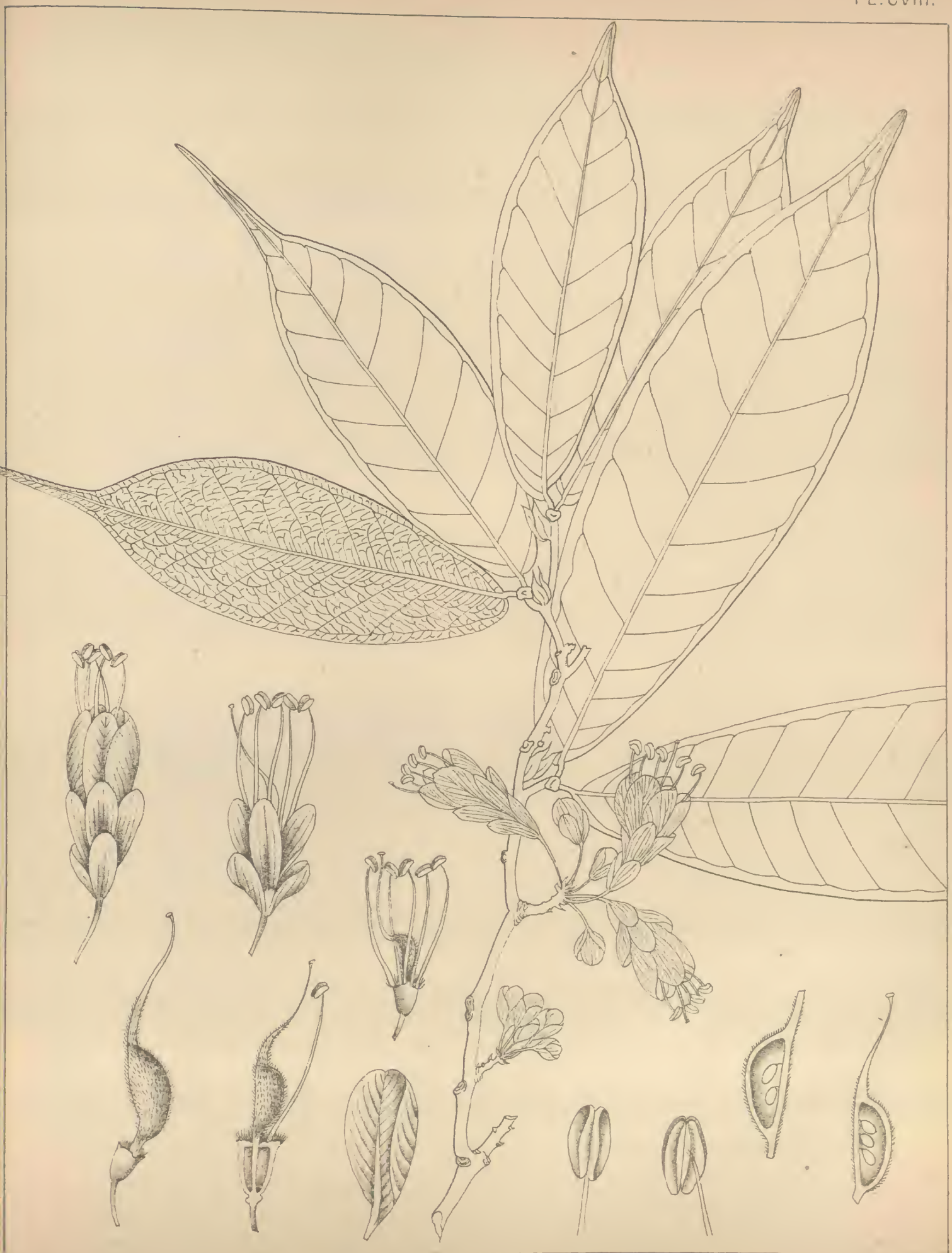
Crotalaria lanata (Bedd.)

Dumphy, Lith.

Govindoo, del. Dumphy, Lith.

Crotalaria elegans (Bedd.)

Govindoo, del. Bauhinia Benthami (Bdl.) Dunphy, Lith.



Govindoo, del. Dumphy, Lith:

Humboldtia unijuga (Bedd:)

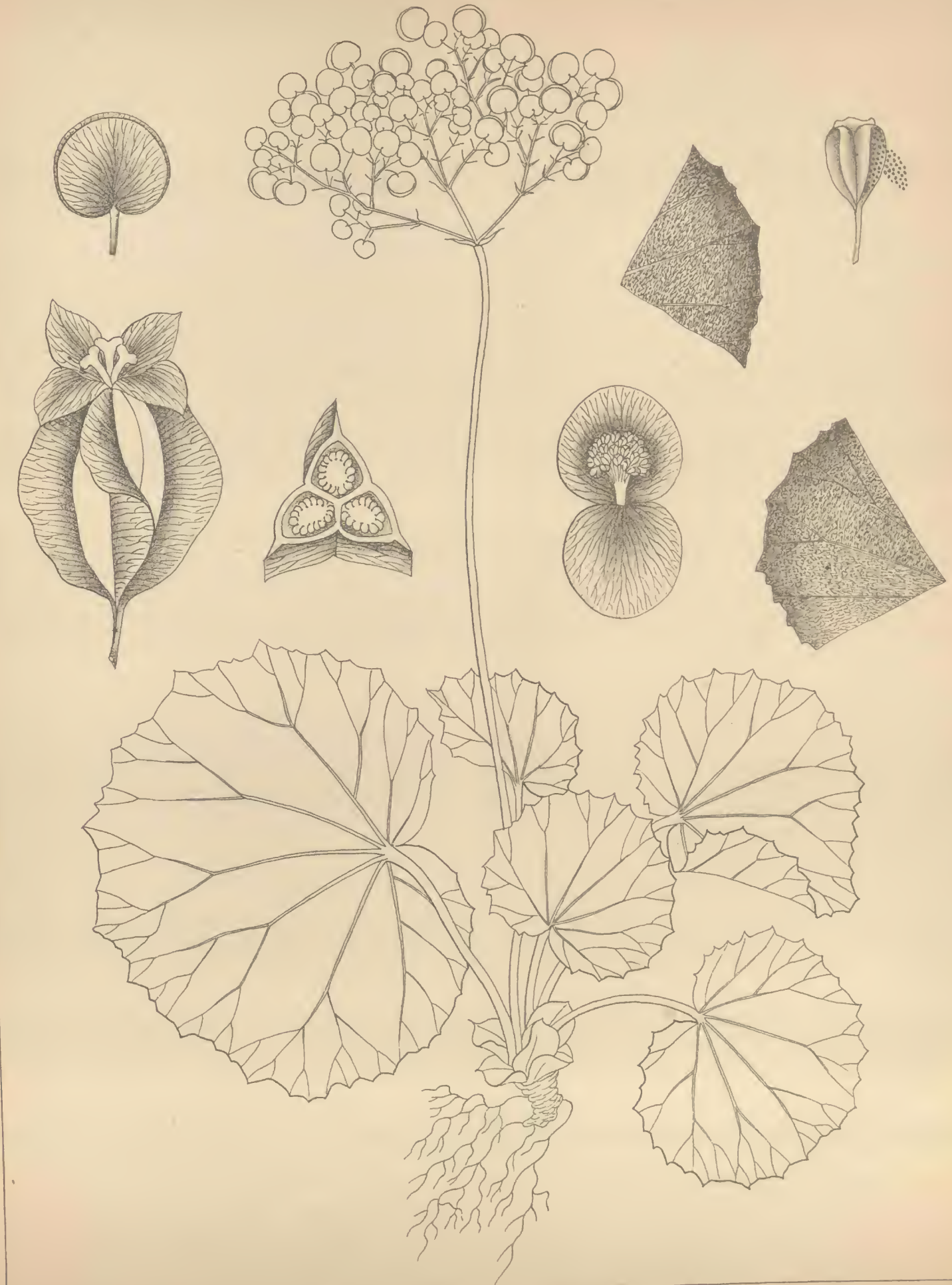
Govindoo, del. Dumphy lith.

Sarinarium Indicum (Bedd.)

Govindoo, del.

Begonia minima (Bedd.)

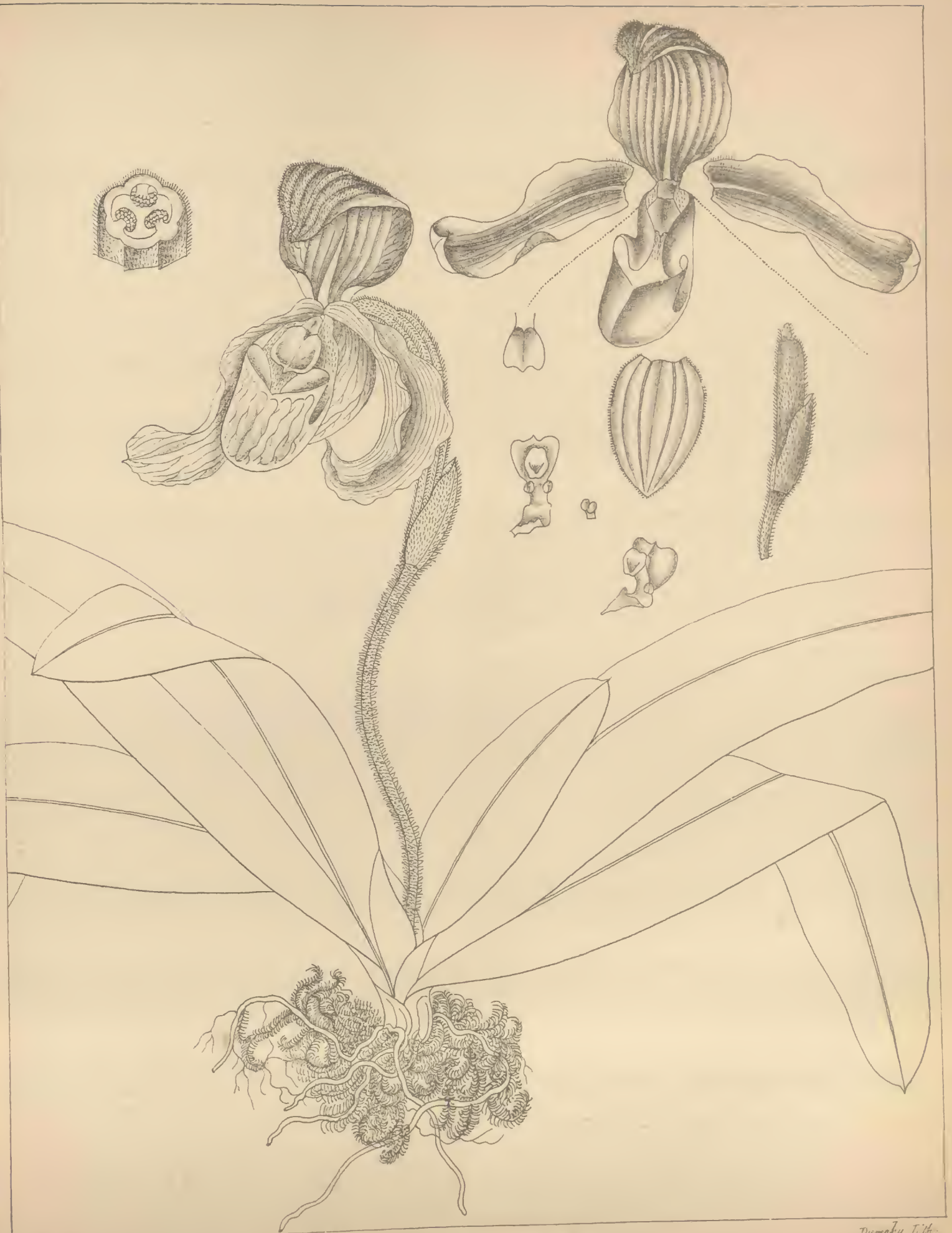
Dumphy, Lith:



Gouinaoo, del.

Dunphy, Lith.

Begonia floccifera (Bedd.)



Govindoo, del.

Dampier. Lith.

Cypripedium Druryi (Bedd.)

Govindoo, del.

Dunepsky, Lith.

Tradisia serratifolia (Wedd.)

Govindoo, del.

Dumphu, Lith.

Zizyphus Wynadensis (Bedd:)

Govindoo, del.

Dumpky, Lith.

Symplocos rosea (Bedd.)

Symplocos Anamallayana (Bedd.)

Dumphy, Lith.

Gawindoe, del

Dumphy, Lith

Symplocos acuminata (Roxb.)

Cowman del.

Cirrhopetalum Thouarsianum (Rchb.f.)

Dumphy Lith.

Govindoo, del.

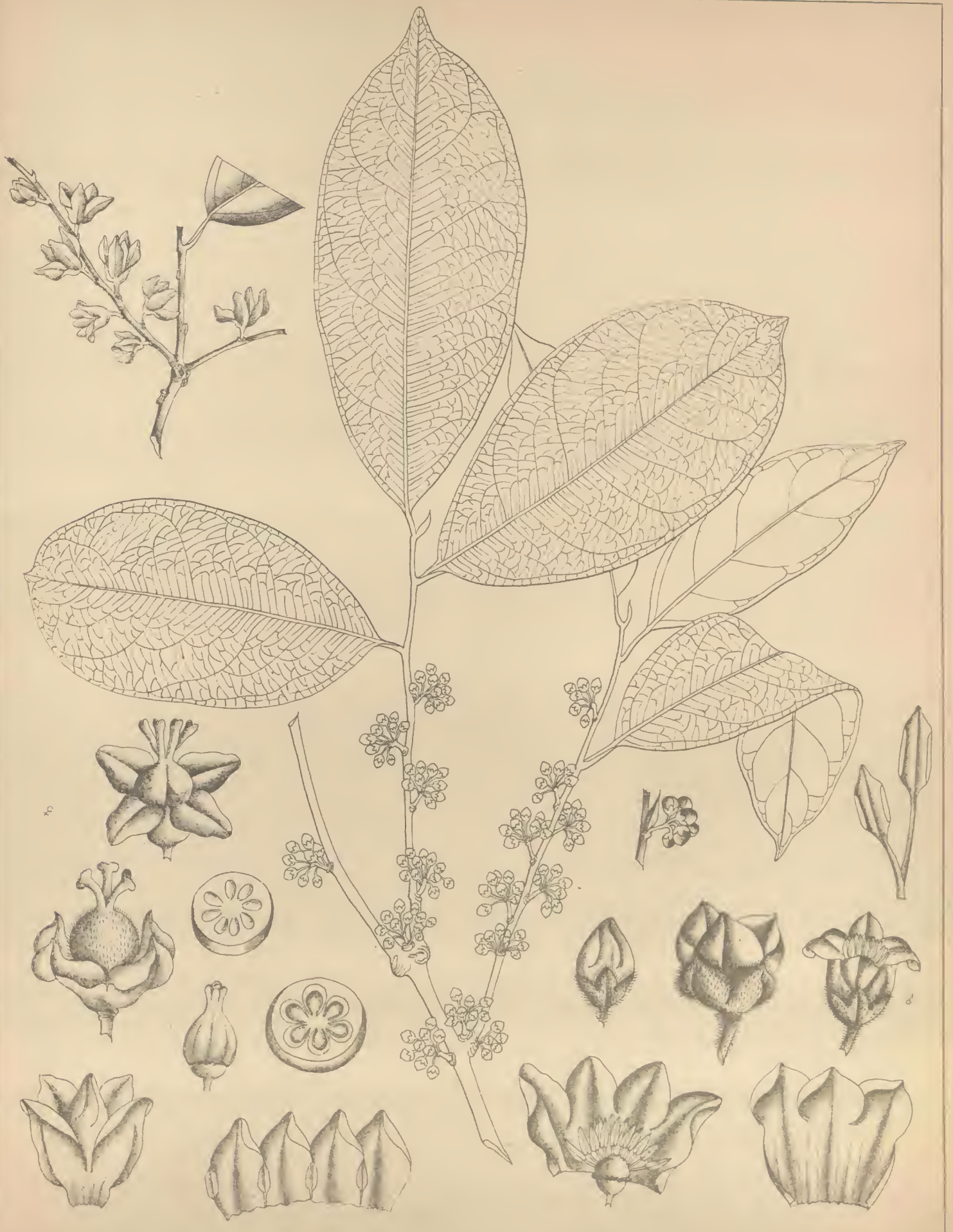
Dampky, Lith.

Exacum atropurpureum (Bedd.)

Drevindow del.

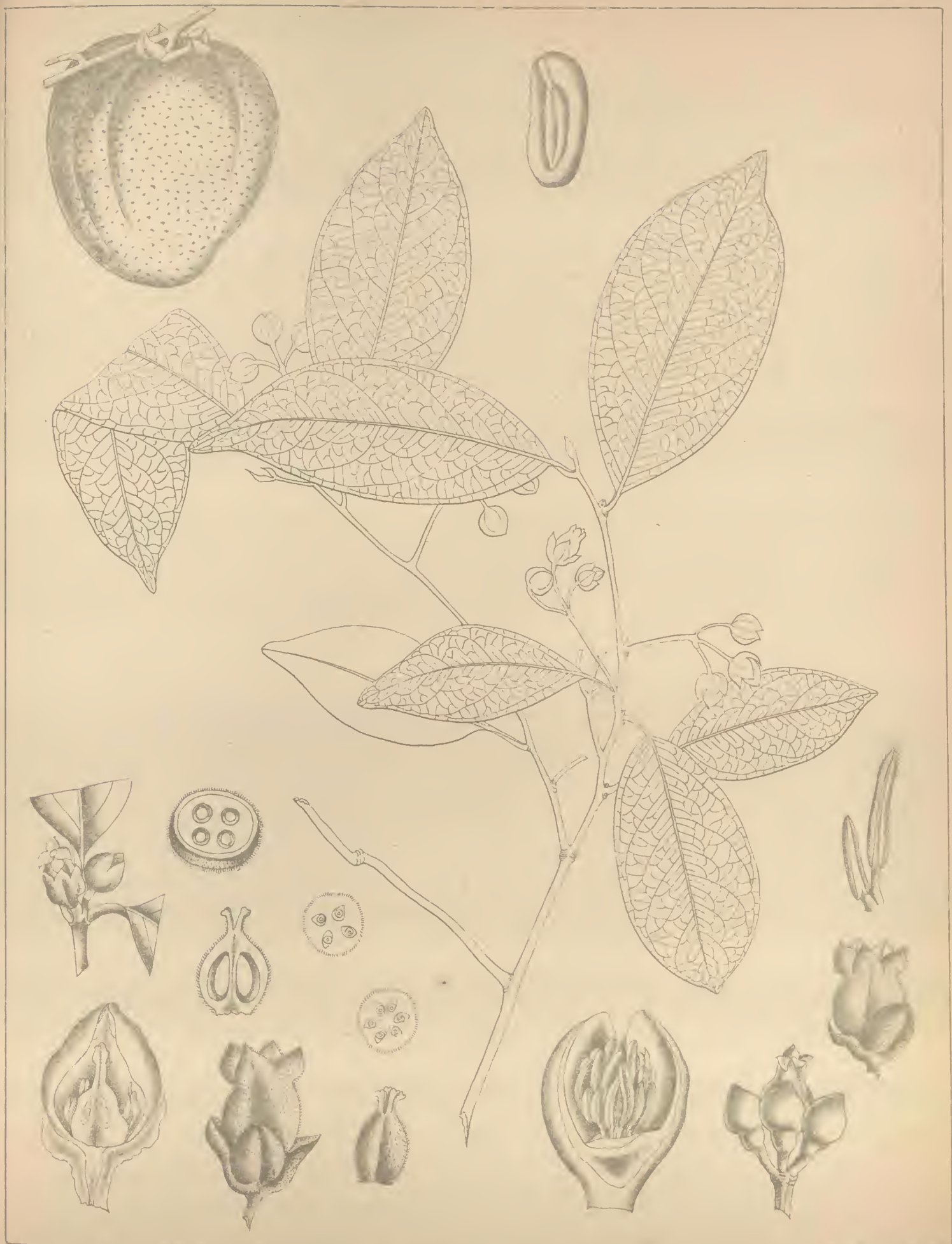
Dimaku, Lith.

Didymocarpus reptans, Roxb.



Juan Prieto y Lith.

Duguetia syphilitica (Pohl.)



Lemaire del.

Diospyros Tupuna (Kaki)

Dumortier Lith.

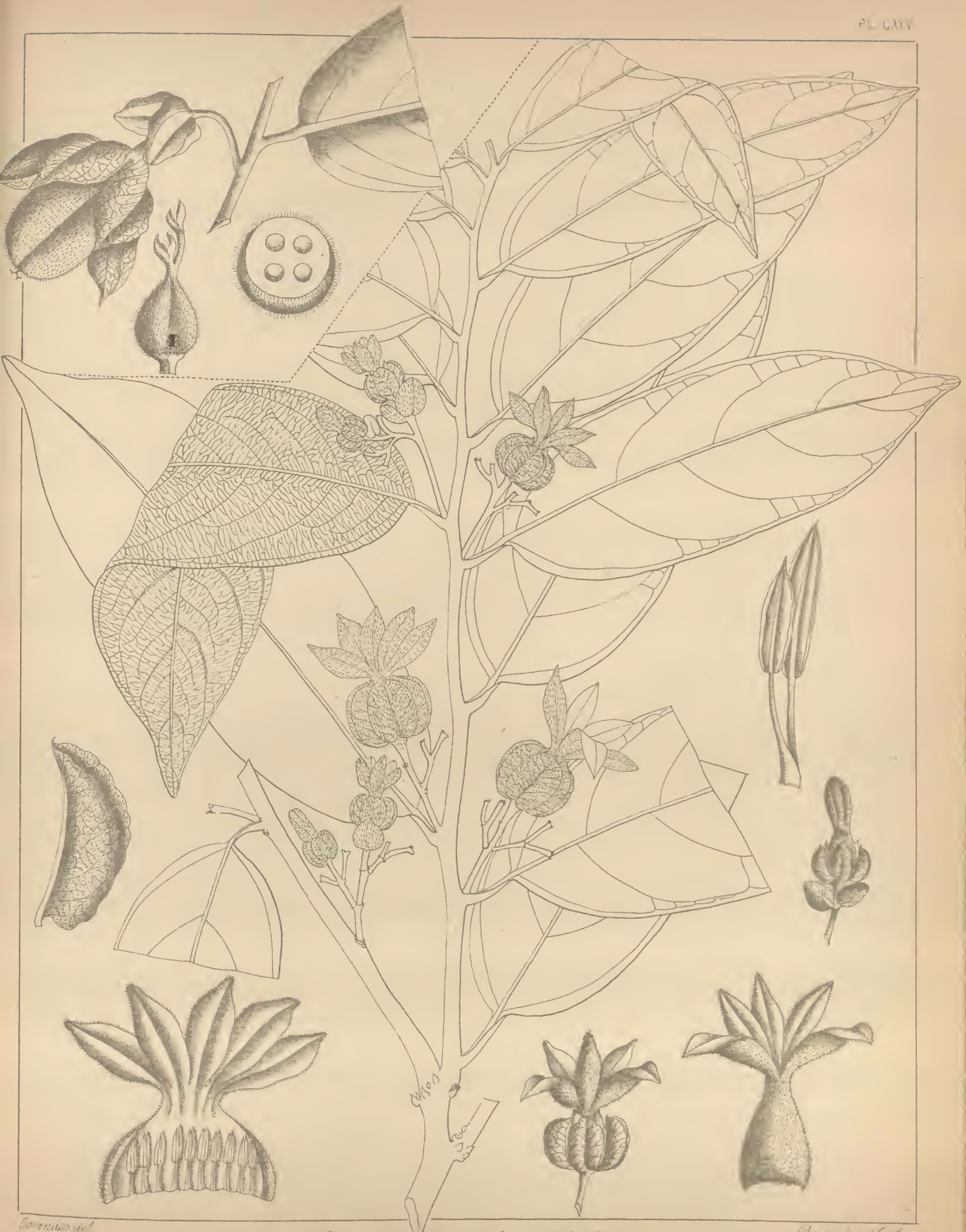
Govindoo. del.

Dyospyros calycina Beddl.

Gouinda, del.

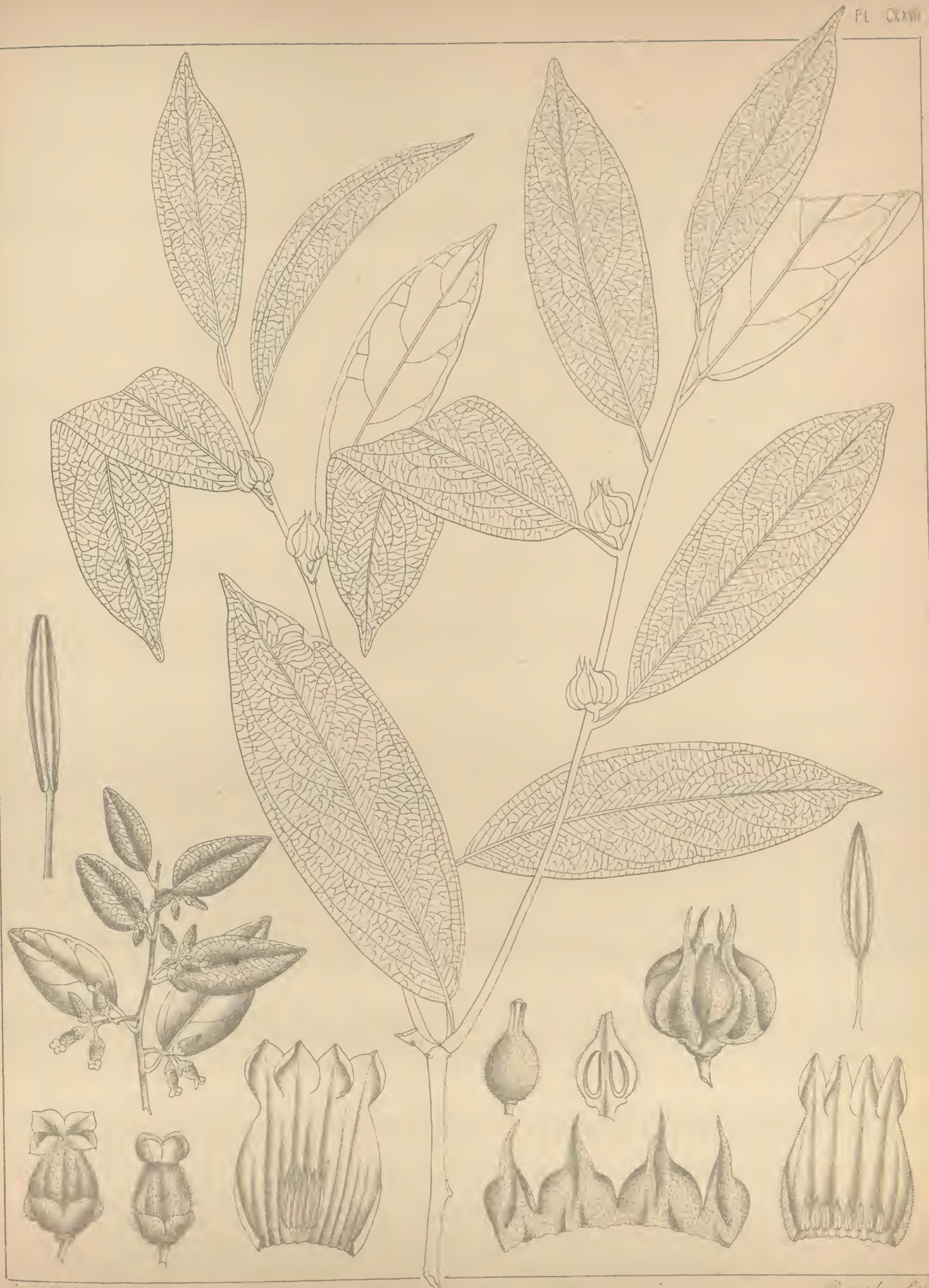
Diospyros nigricans (Palz.)

Dominey, Lith.



Diospyros paniculata Dalz.

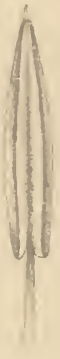
Dioscorea crumenata (Thw.)

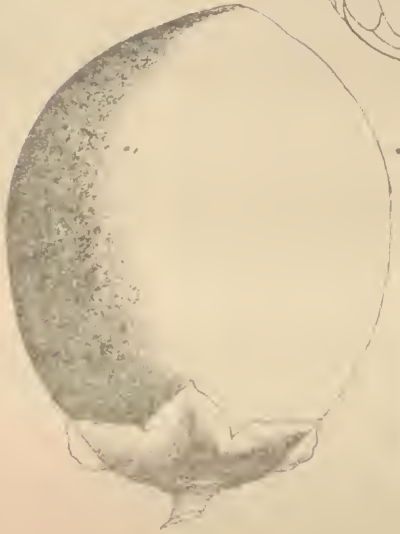


Gravenda del.

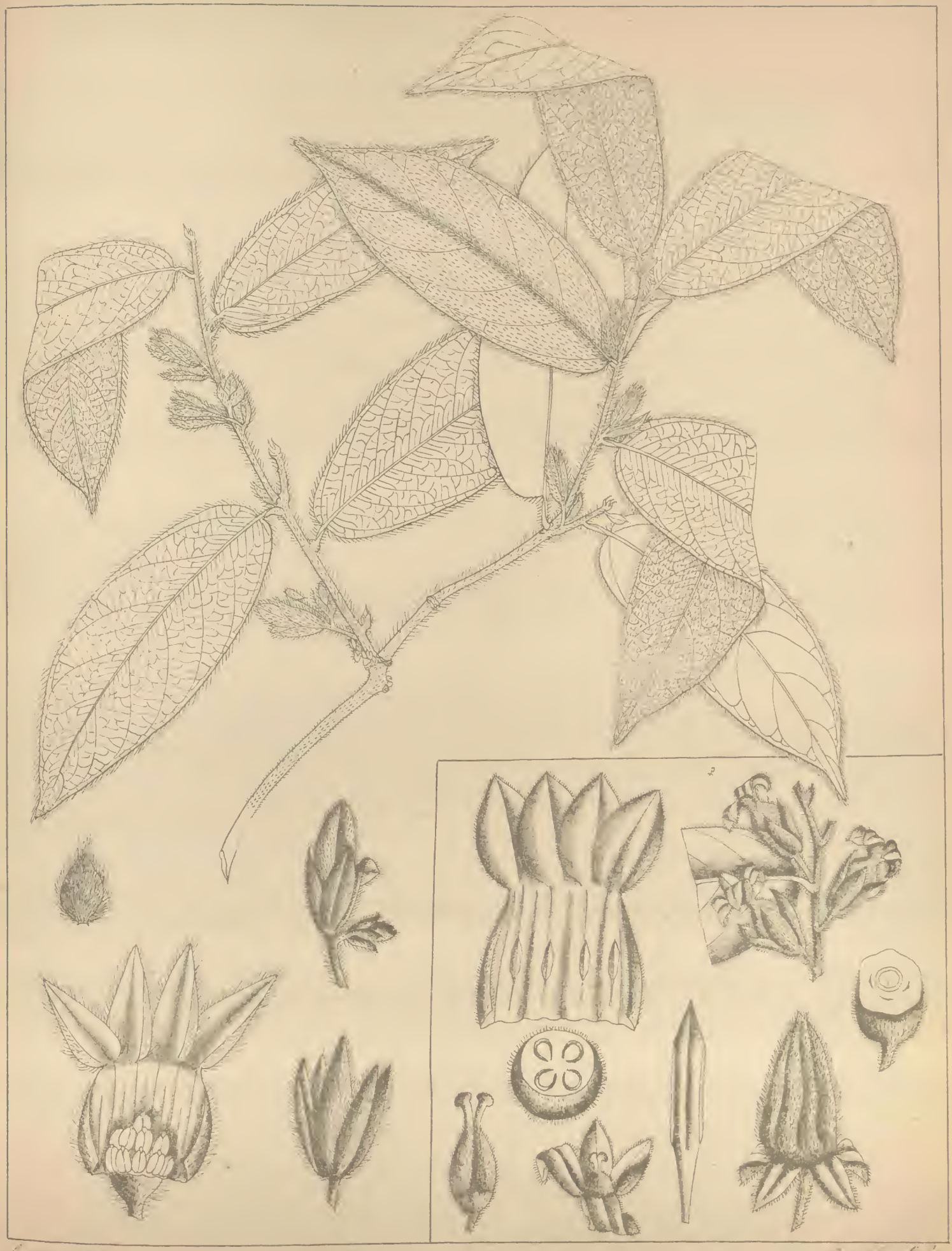
Dimphy Lith.

Diospyros affinis, Hiern.





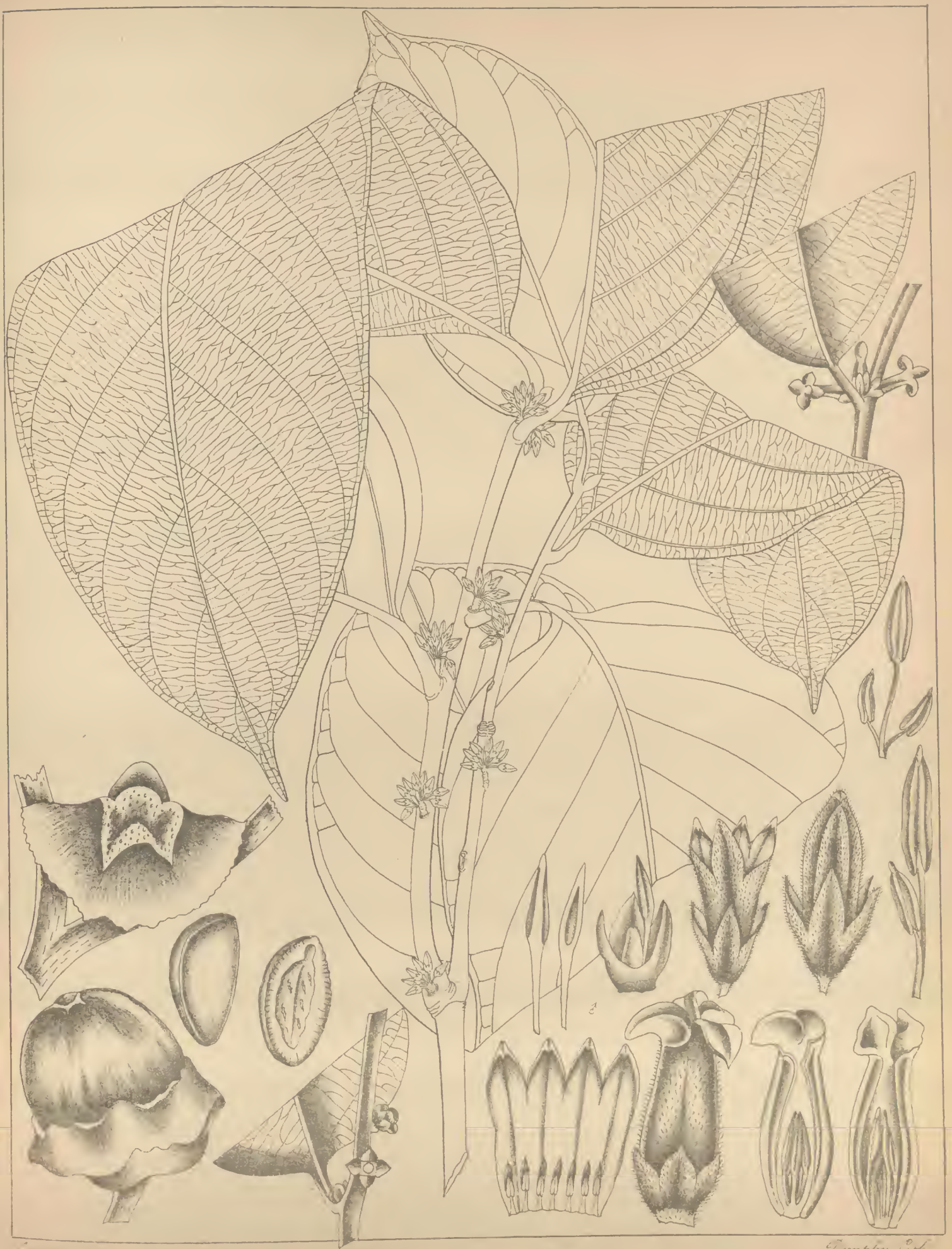
Gerardia purpurea Linn.



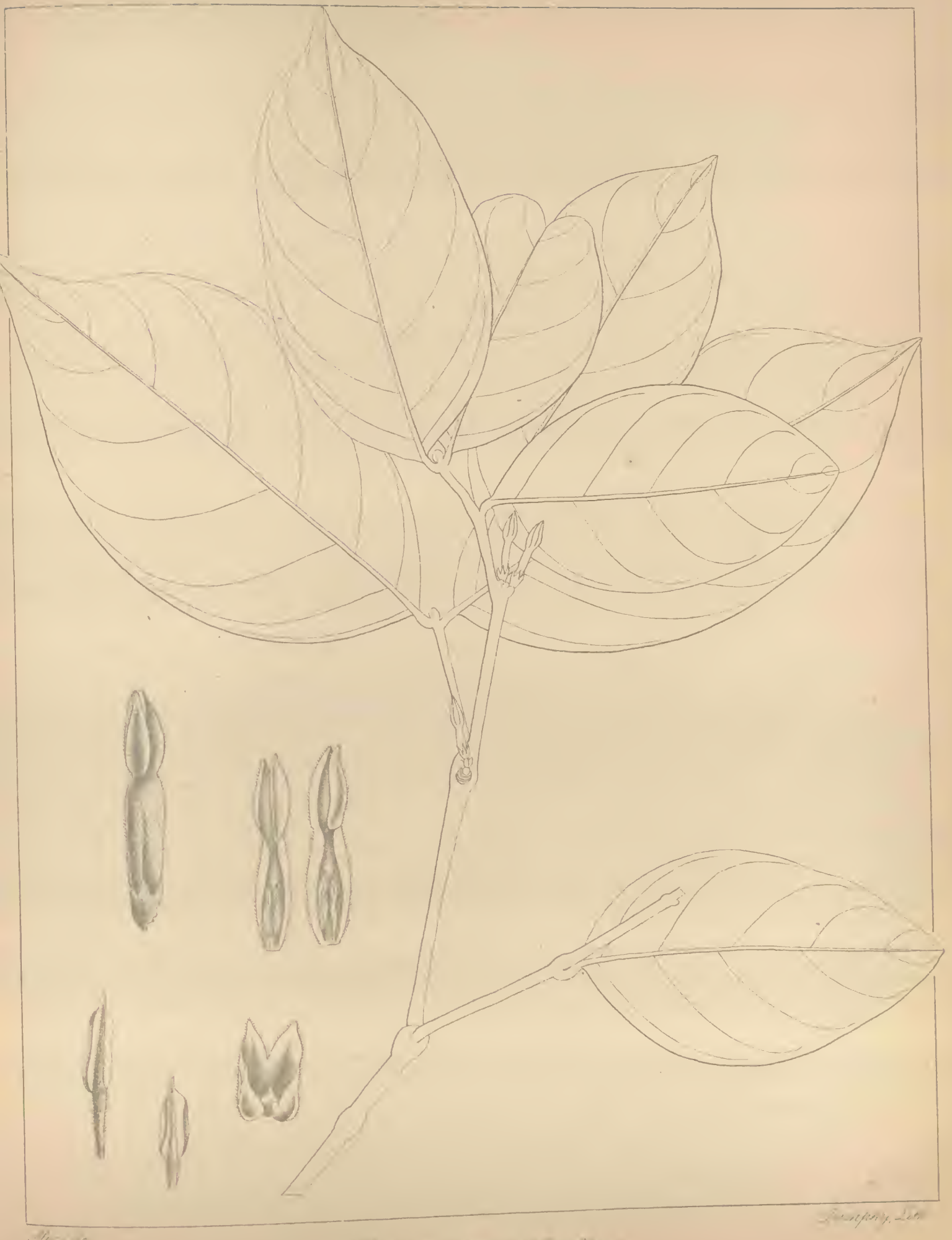
Gourmelon, del.

Dunfay, Lith.

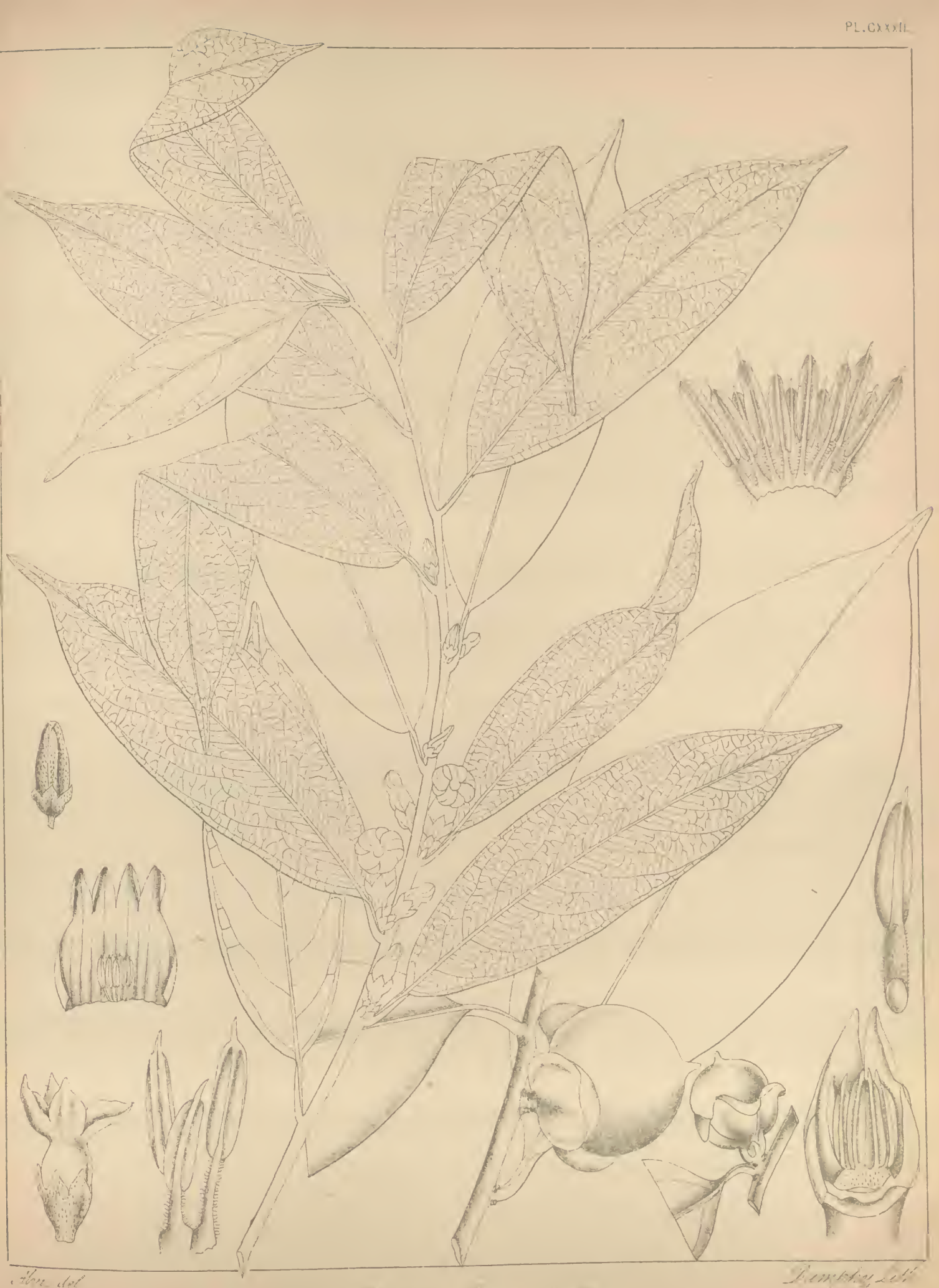
Diospyros pruriens, Dalz.



Dospyros insignis, Kew.

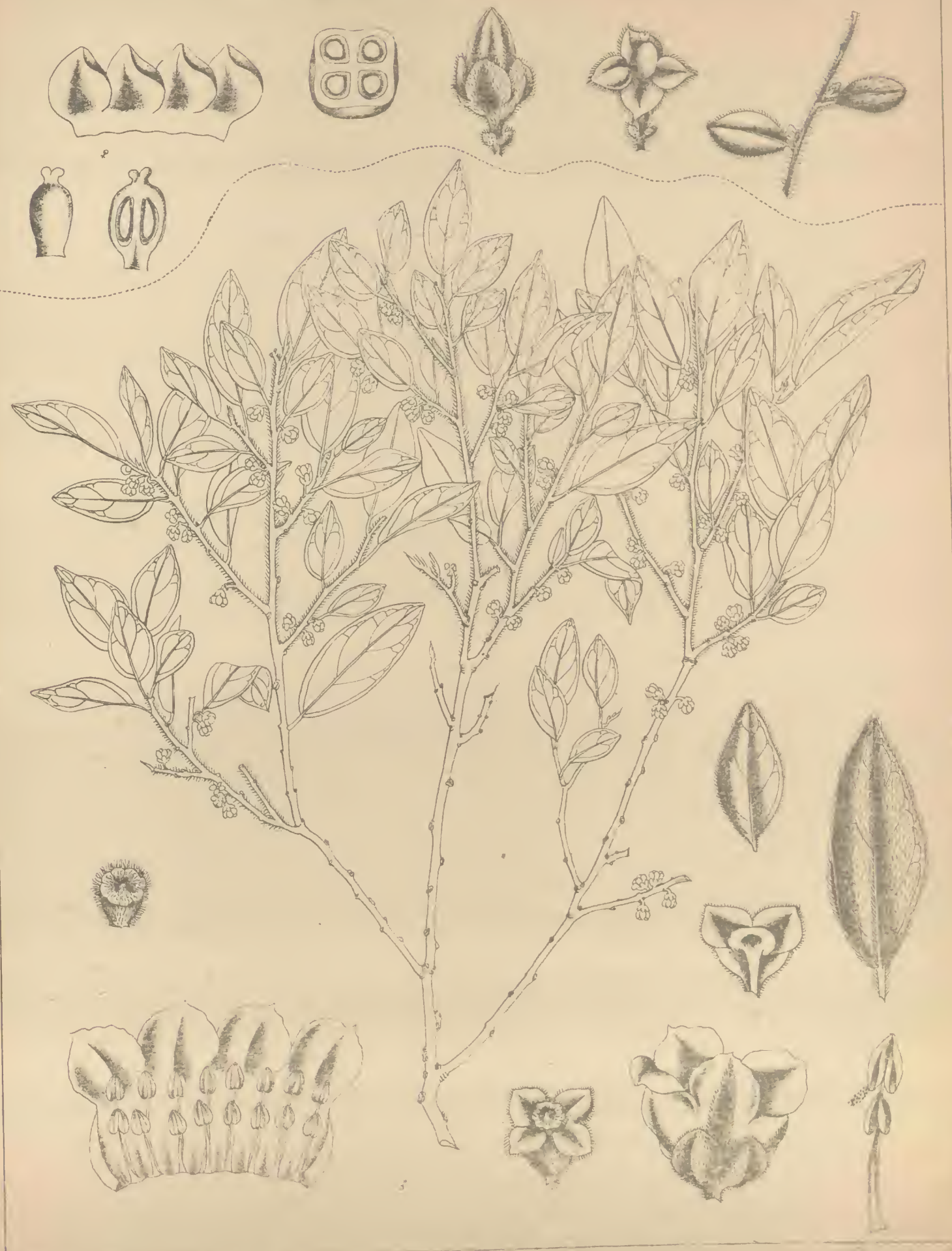


Dicypellium caryophyllatum Nees.



Flore del. Bentley sculp.

Lasiopetalum Baueri. Sm.



Hart. del.
Dendrophyllus Brad.

Govindoo del.

Lowry Lith.

Pterospermum Thwaitesii Bedd.

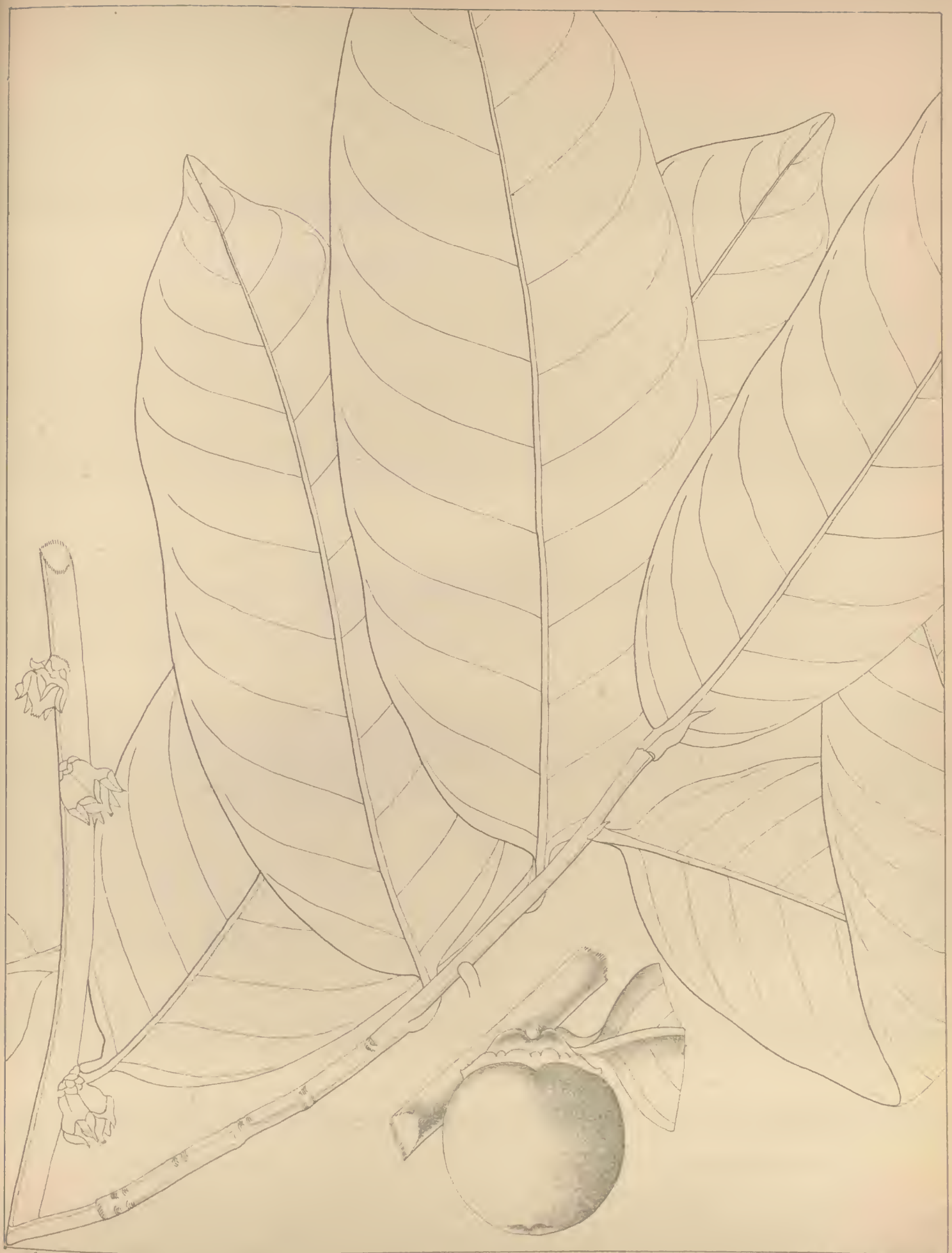
Gerinter ast.

Lasiopetalum Baueri Reid

J. Wrenden, del.

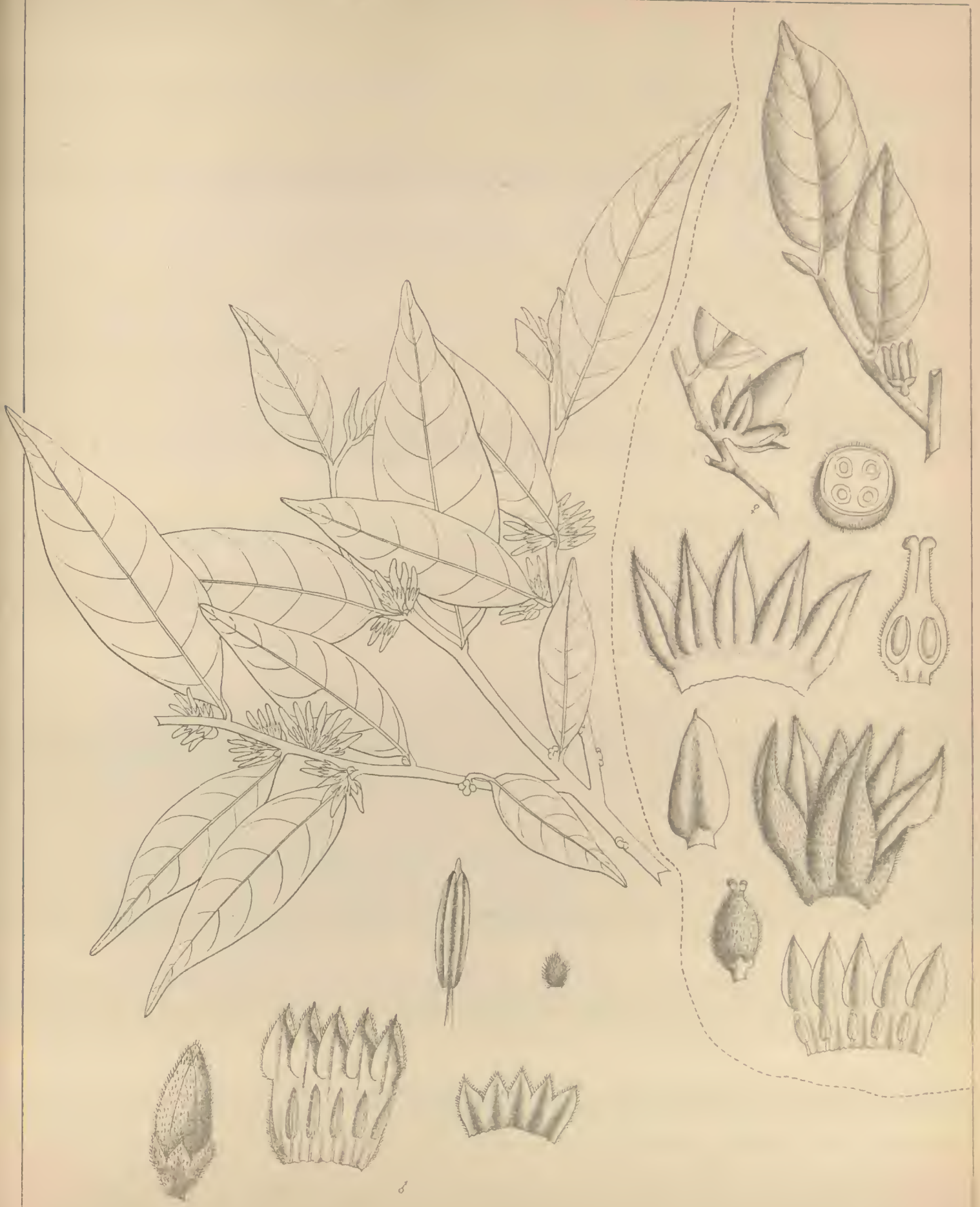
Dunphy, Lith.

Dioscorea hirsuta Lam.



Hawes del. Dunsby Lith.

Diospyros Mannii Hk.



Flora, del.

Lardizabala alternata Ruiz

Harris, del.

Sowerby, Lith.

Impatiens parasitica. Beddé.

Covindoo del

Dunphy lith

Impatiens viridiflora (Wight)

Govindoo. del.

Dumphy Litte

Impatiens parviflora, (Bedd.)

Impatiens Travancorica. (Bedd.)

Dumphy. Lith.

Impatiens scabriuscula. Heyne.

Dumphy Lith.

Fournier del.

Imp. Lemercier Paris.

Epipactis elegans, Boiss.

Curtis del. et lith.

Curtis, Botanical Magazine, Vol. 1 (2nd ed.)

Ramphis Cutis

Gomndo, del.

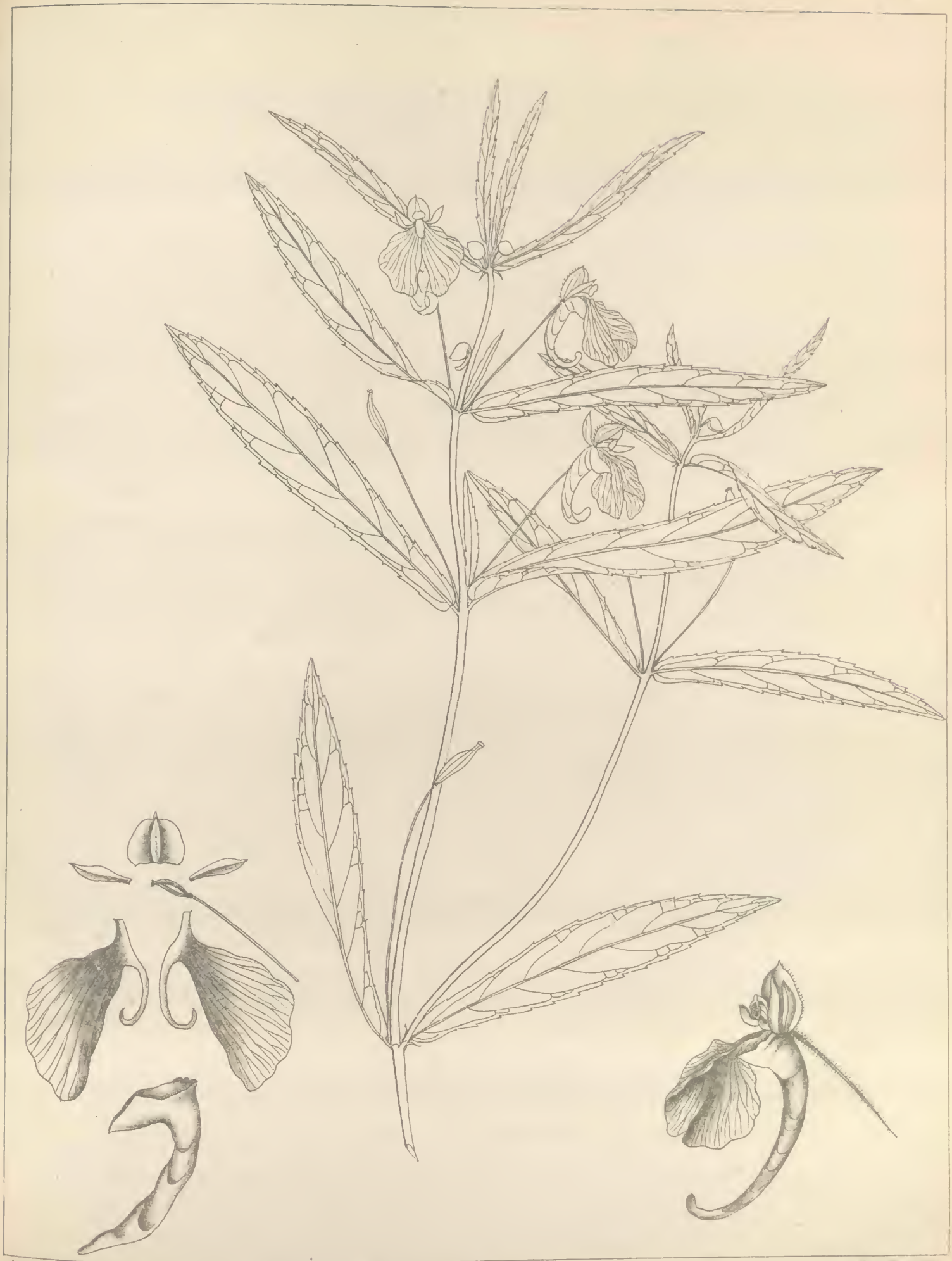
Dumphy, Lith.

Impatiens Tongachee, (Bedd.)

Grovsdco. del.

Dumpity Lith.

Impatiens phœnicea. Bedd.



Impatiens ligulata. Bead.

Gonzalez, del.

Dunphy, Lith.

Impatiens Anamallayensis (Bedd.)

Swainson del.
Burnett Sculp.

Covindoo del.

Dunphy Lith.

Impatiens grandis (Hayne)

Cra. ad nat. del.

Lemaire et Bruet.

Cra.ea Naumannianum. Bald.

Quassia Kalabrensis Desc.

Govindoo: del:

Dunphy Lith.

Sonerila Travancorica. Bedd.

Ipomoea Mutabarica Roxb.

Drawn by J. Hill.

Arcona rotundifolia, Baill.

Pogostemon Travancoricum, Bedd.

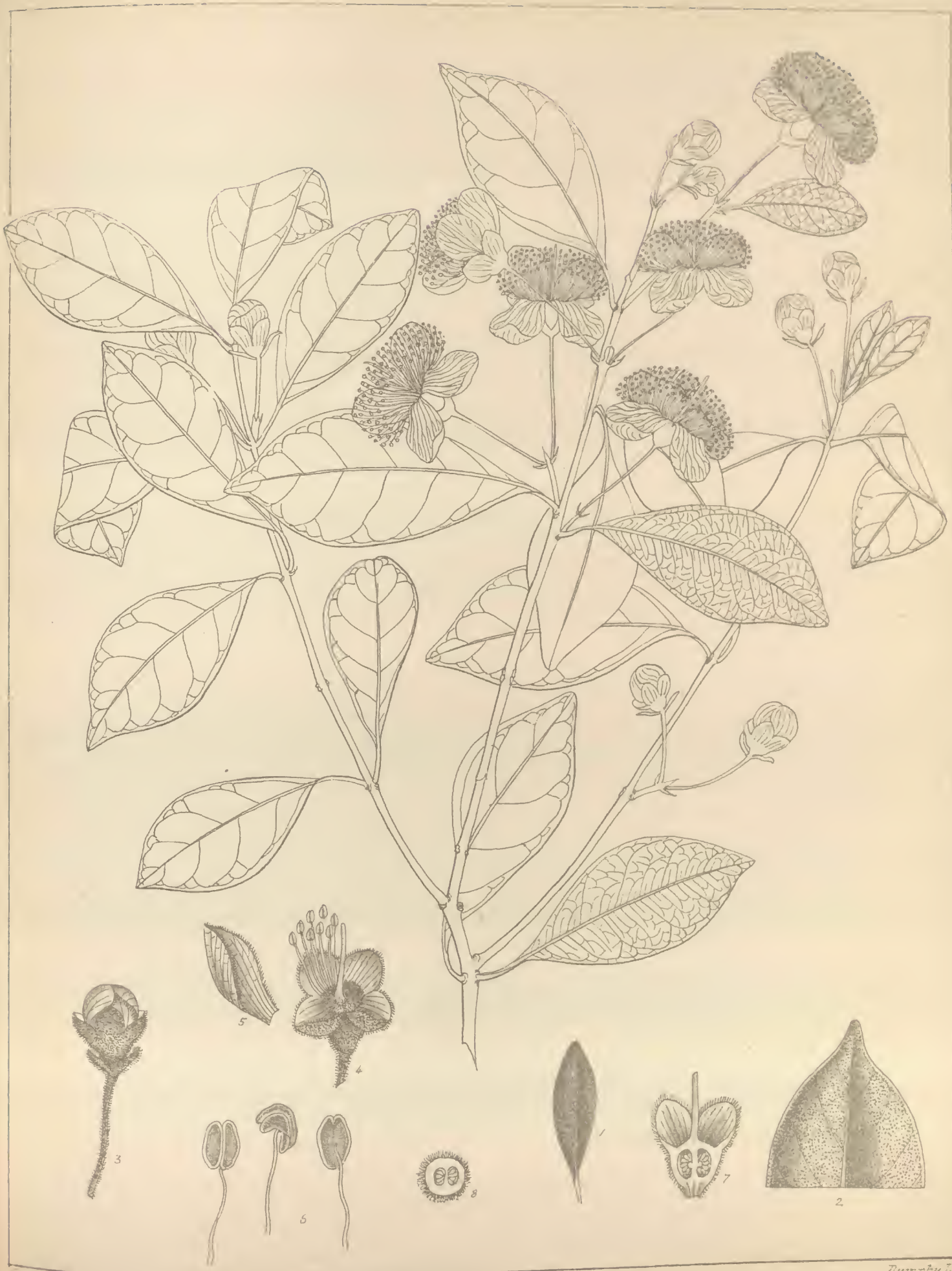
Govindoo del:

Dumpley Lith.

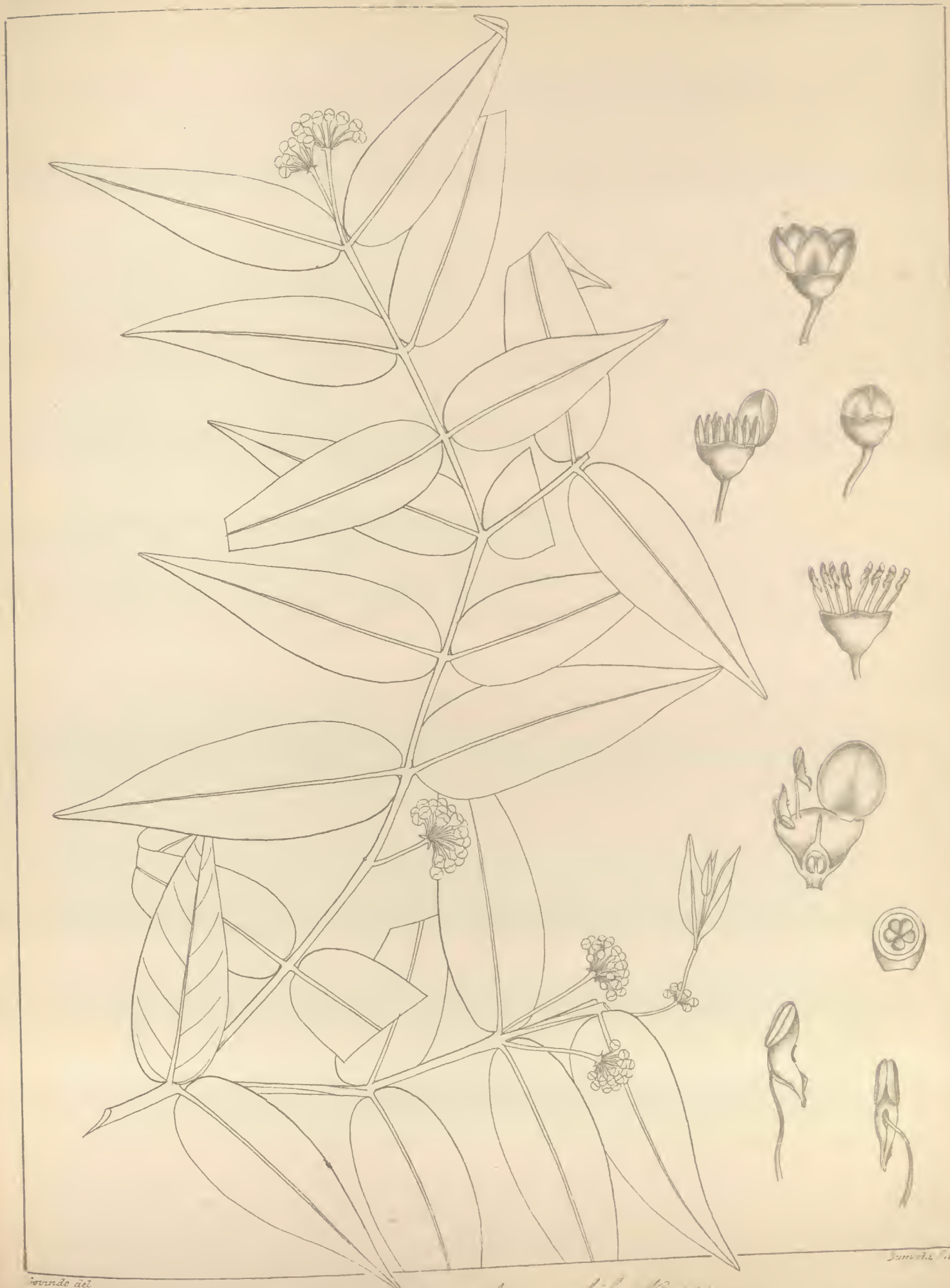
Casearia Wynadensis (Bedd.)

Connedo del. Dunphy Lith.

Eugenia? Wynaadensis. Bedd.

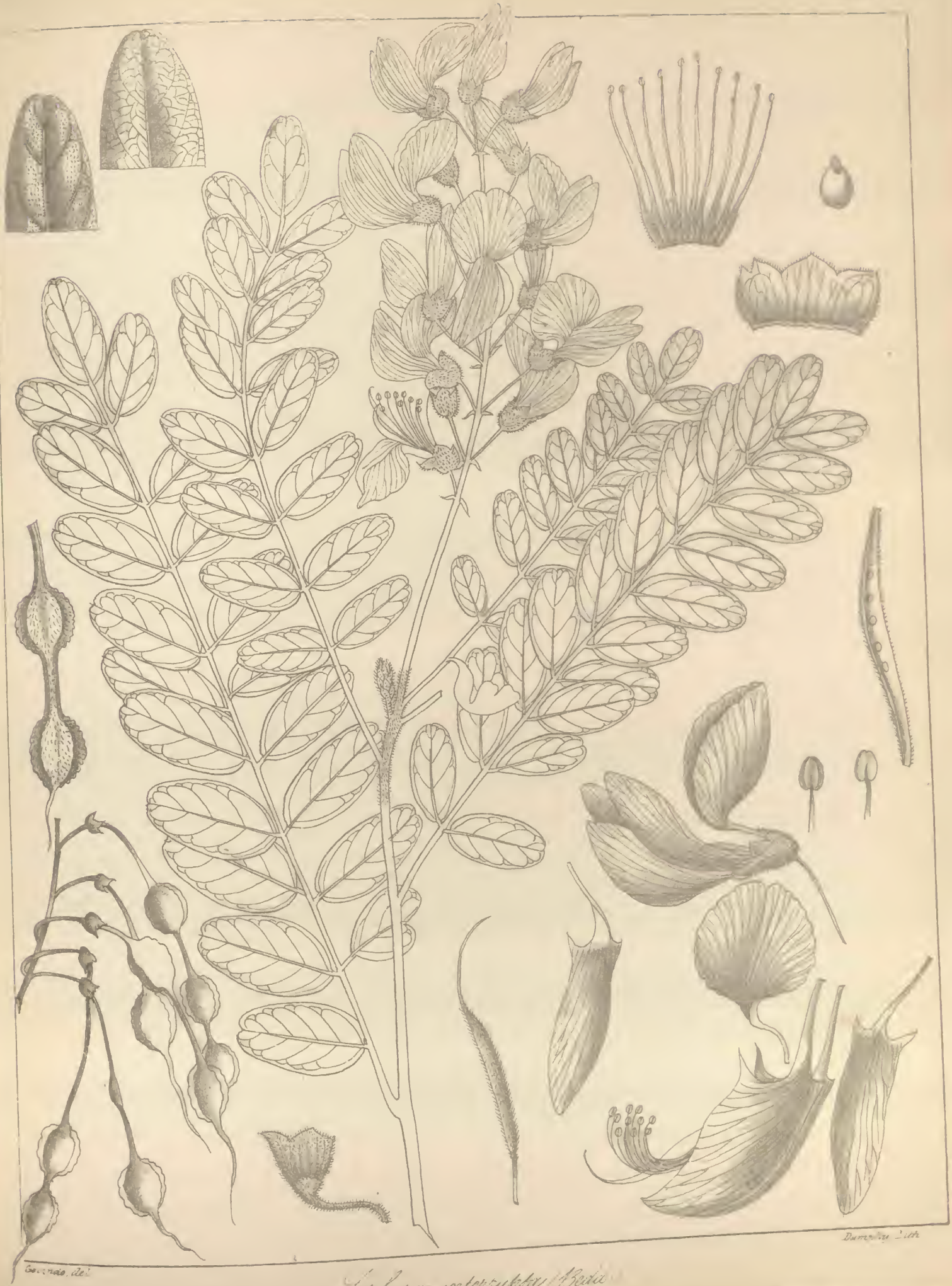


Eugenia Balansensis Bedd.

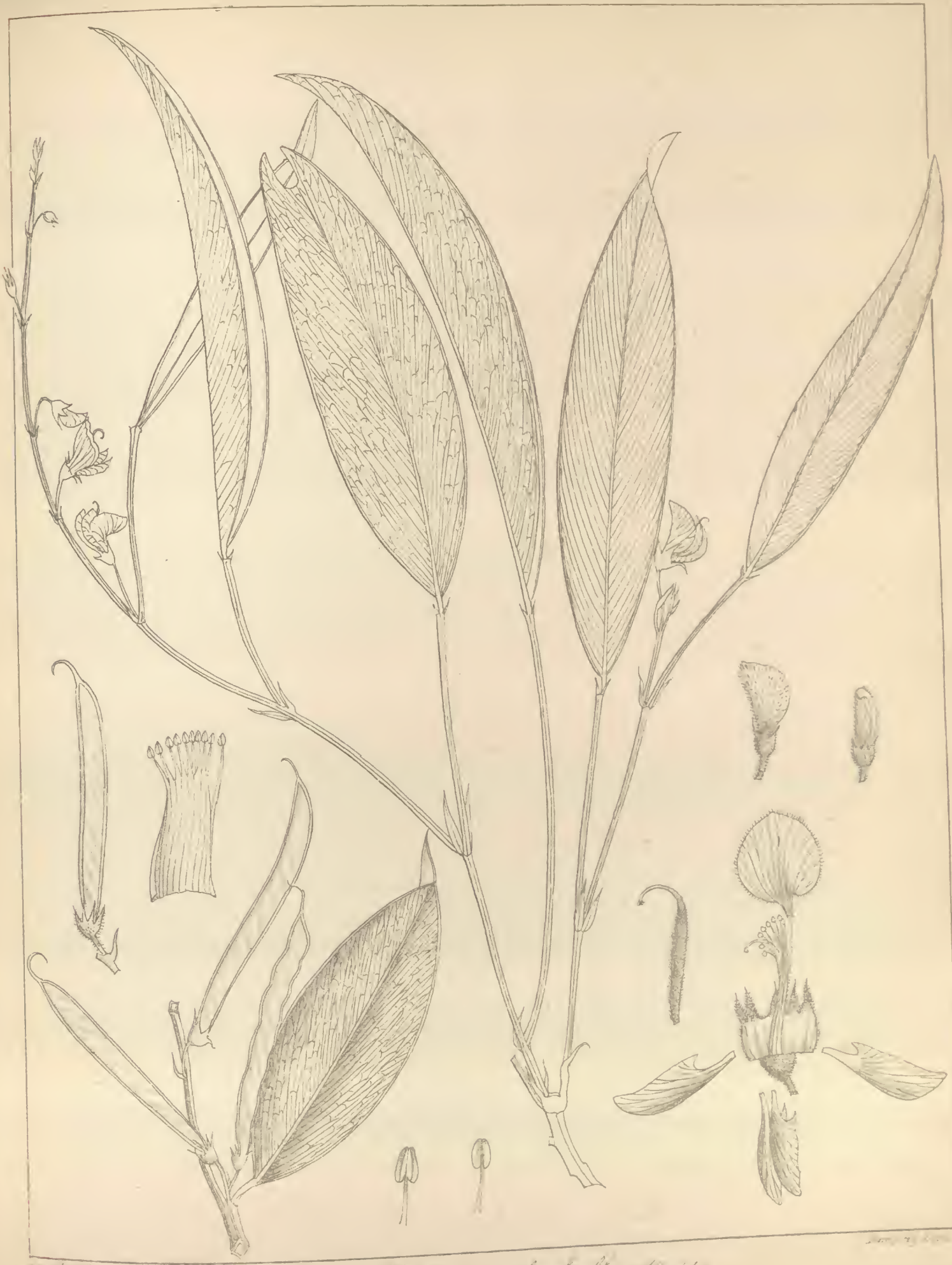


Memecylon amabile Bedd.

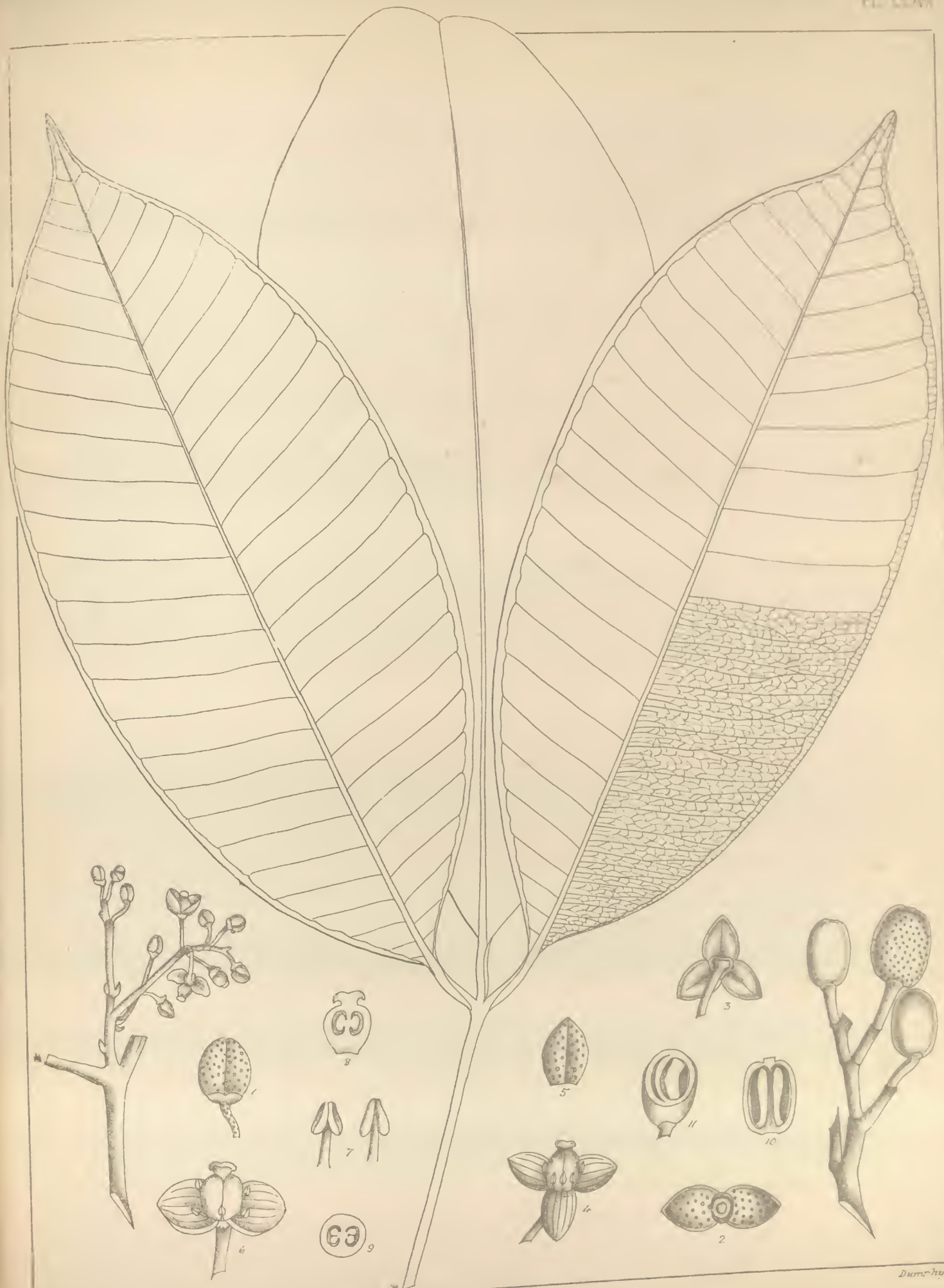
Strongylon gracile, Wall.



Tephrosia interrupta, Benth.



Leptolaena alaternifolia Baill.



Toddalia bilocularis Wt.

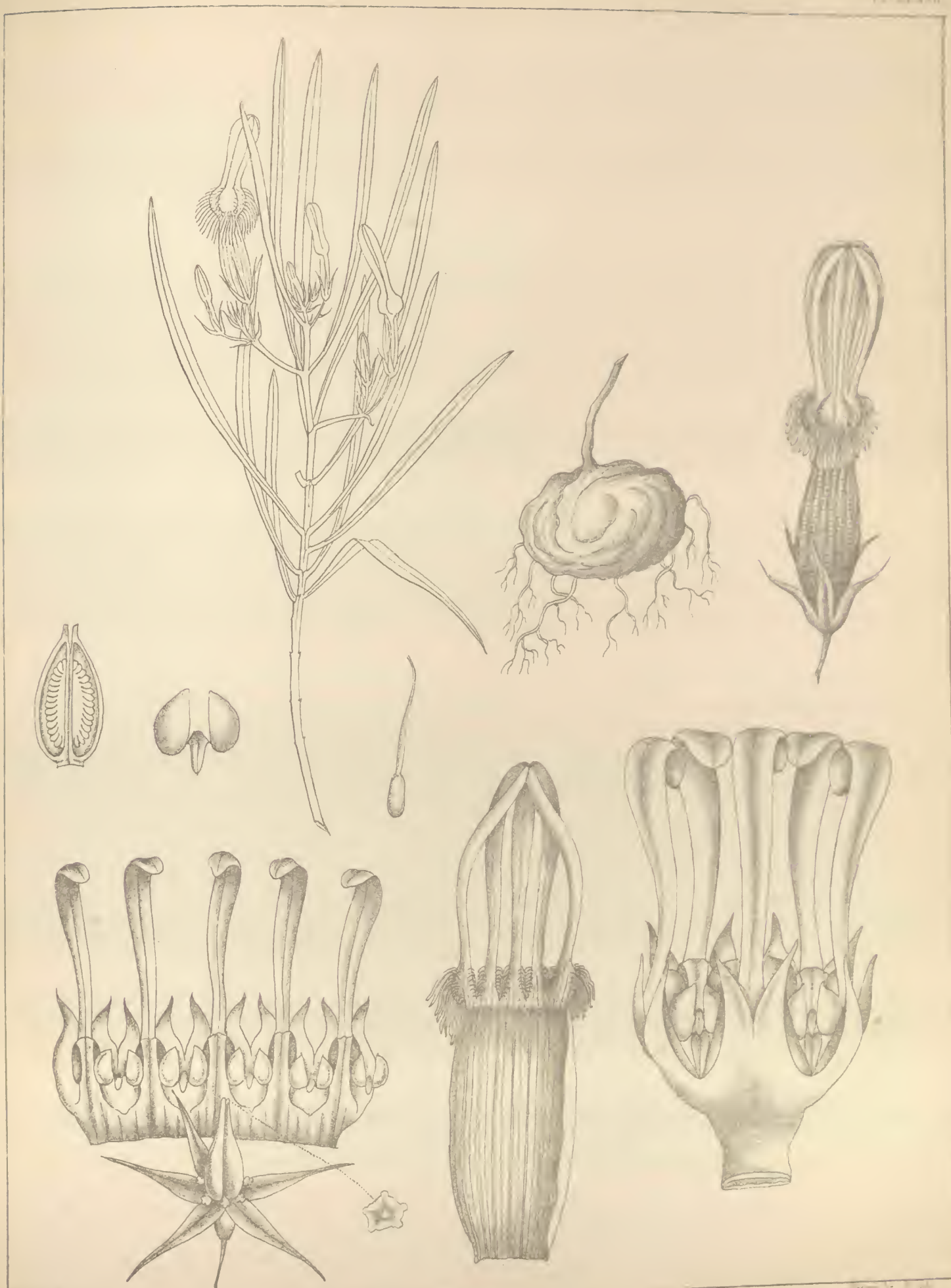
Gesneria obovata Kunth.

Viola rotundifolia (Reich.)

Ravenda del

Rumph. Ind. Auct.

Ficus amplexicaulis. Reinw.

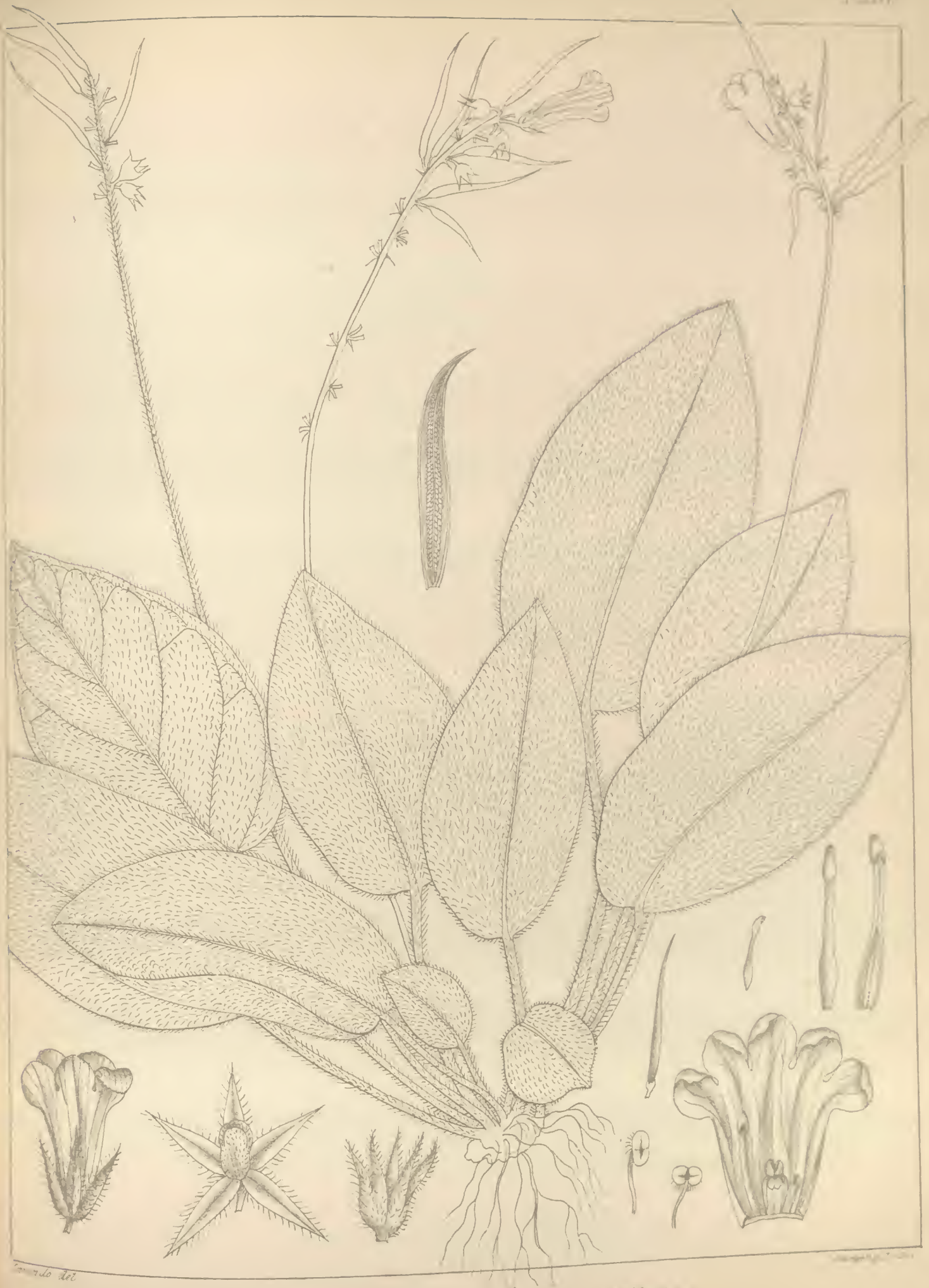


Cyrtopodium Limbriferum Barb.

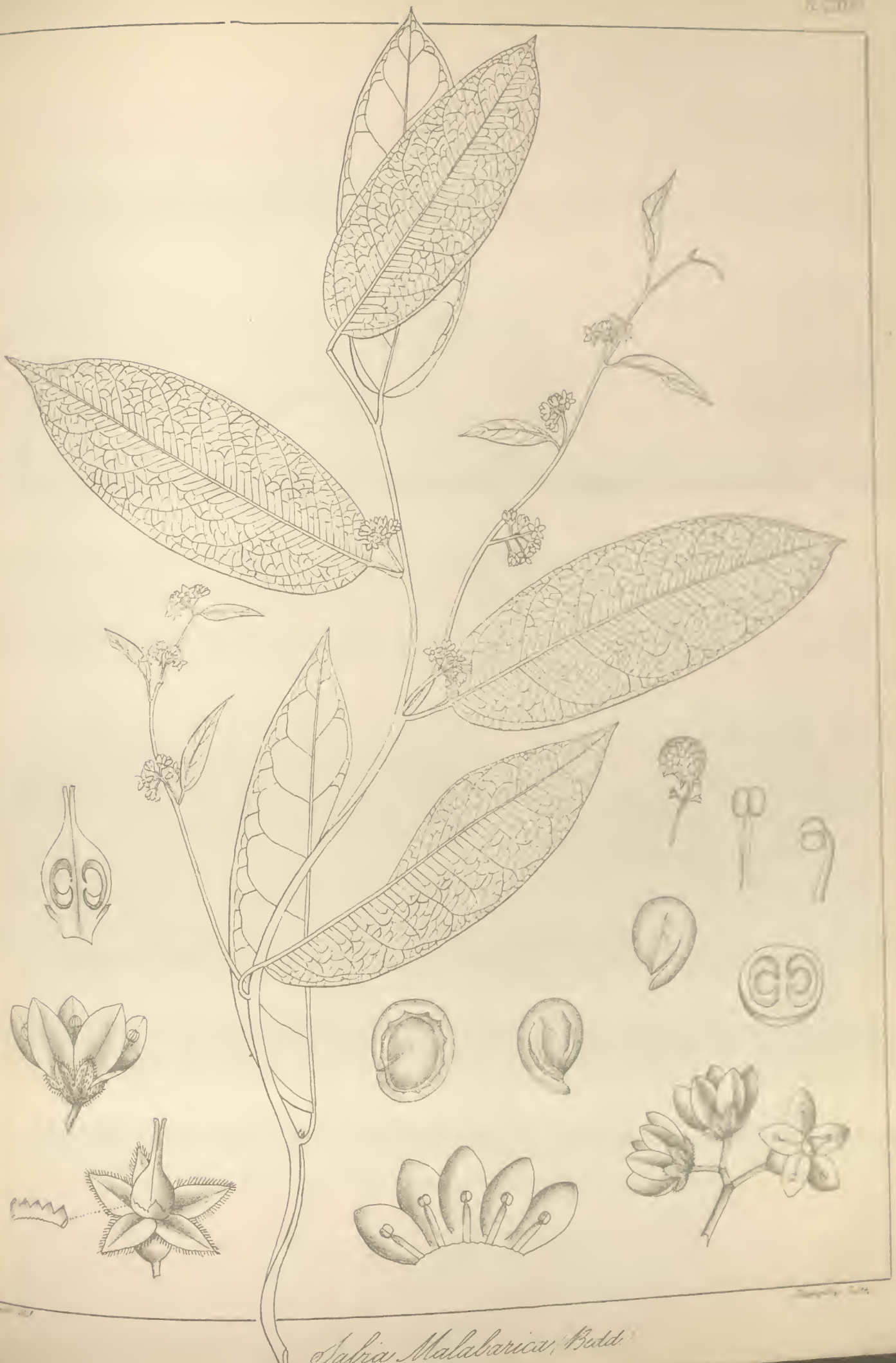
Ceropegia ensifolia Bedd.

Convolvulus brasiliensis, Linn.

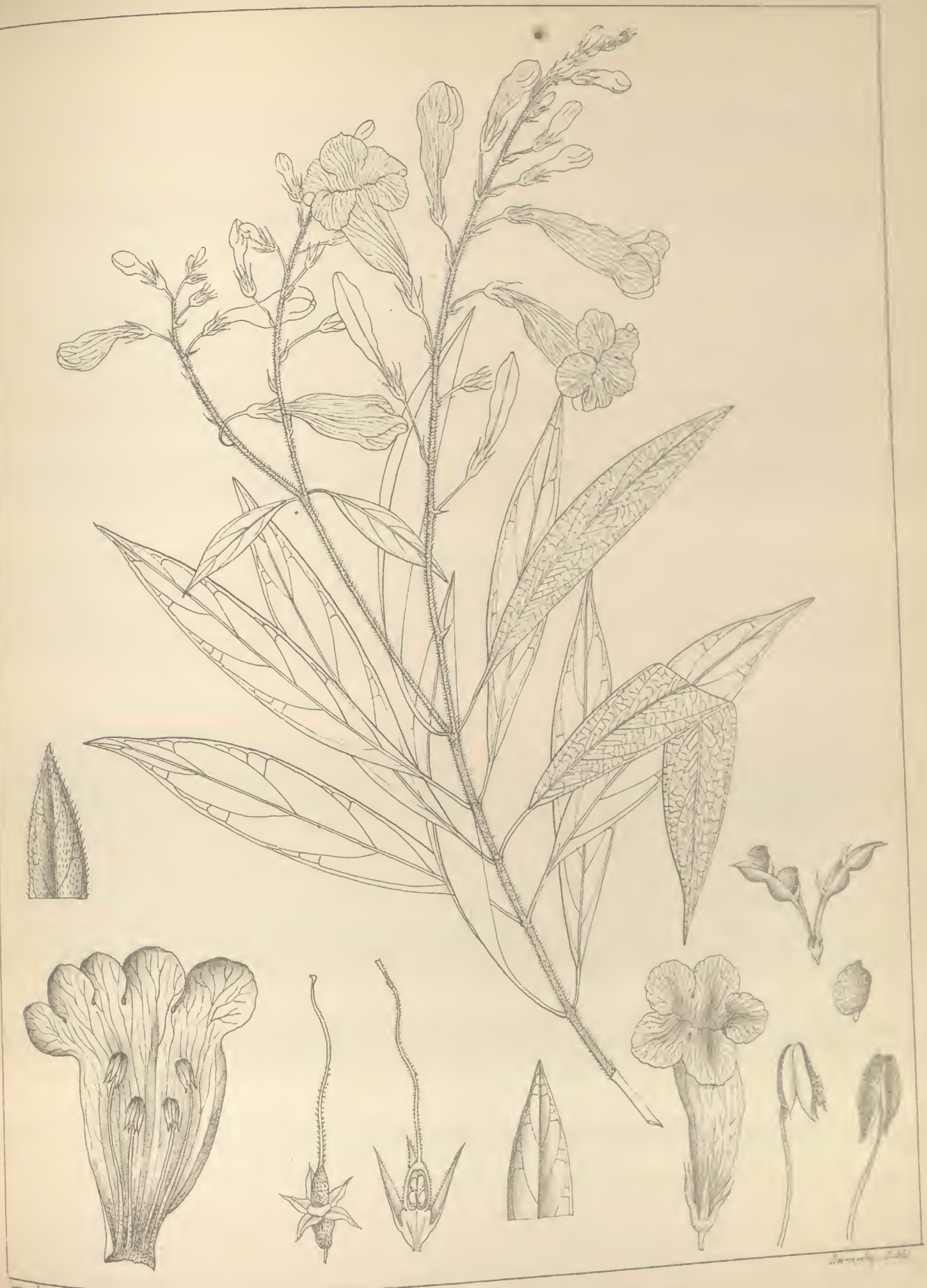
Chilocarpus Malabaricus. Wall.



Didymocarpus membranacea Wall.

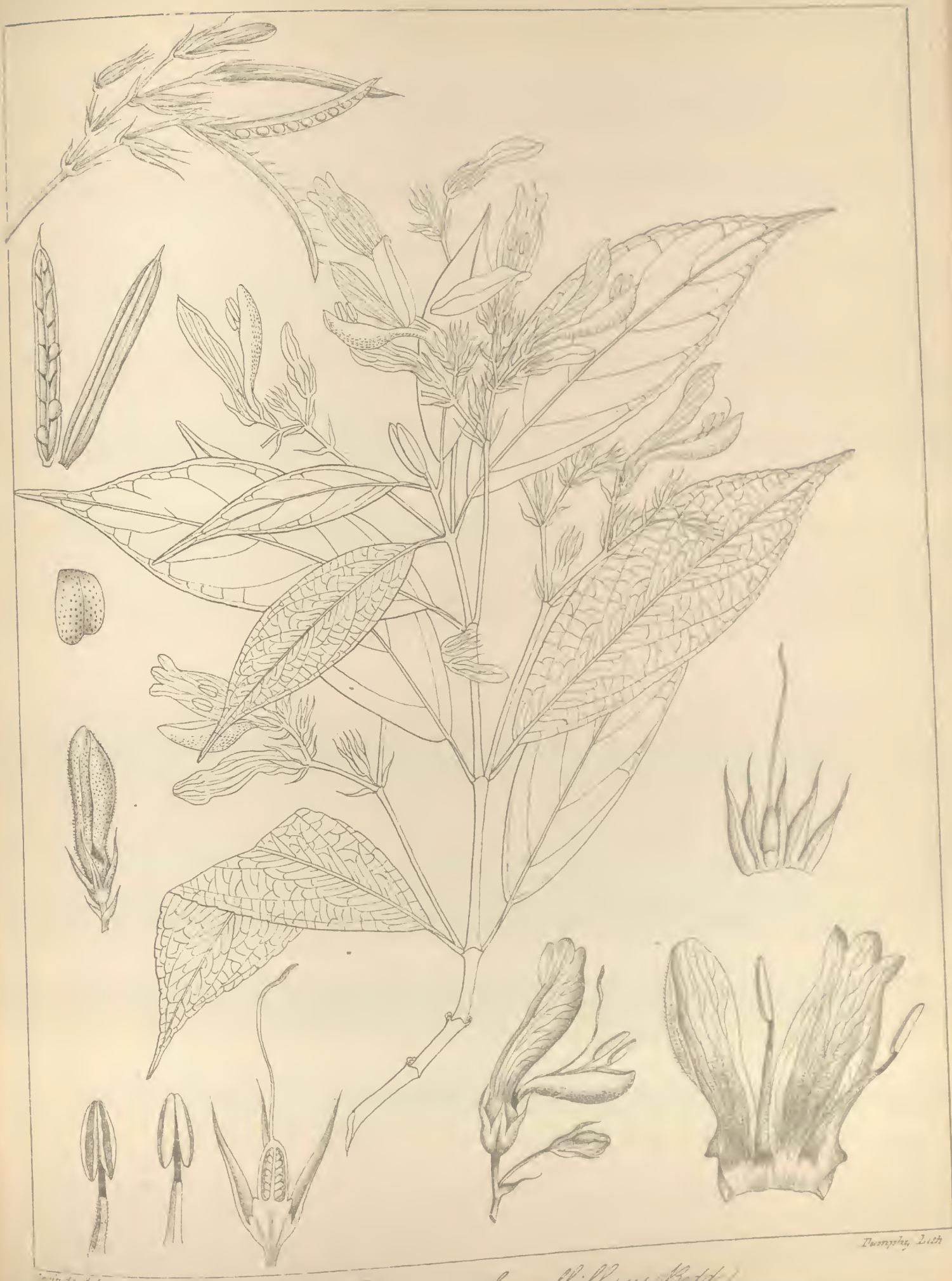


Salvia Malabarica, Bedd.



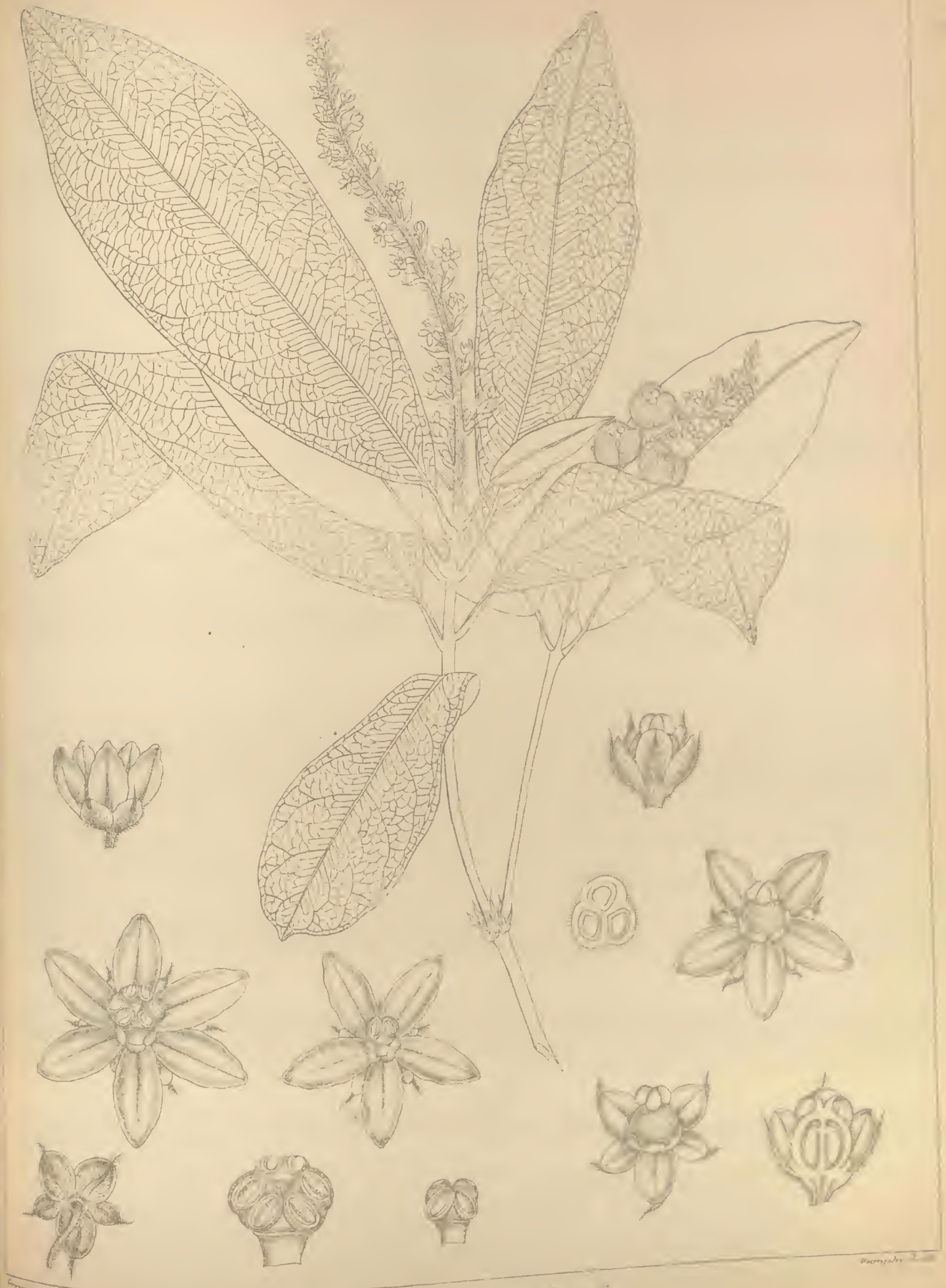
Asystasia Travancorica Bedd.

Pelogyne grandis Wedd.



Phlogacanthus albiflorus Bald.

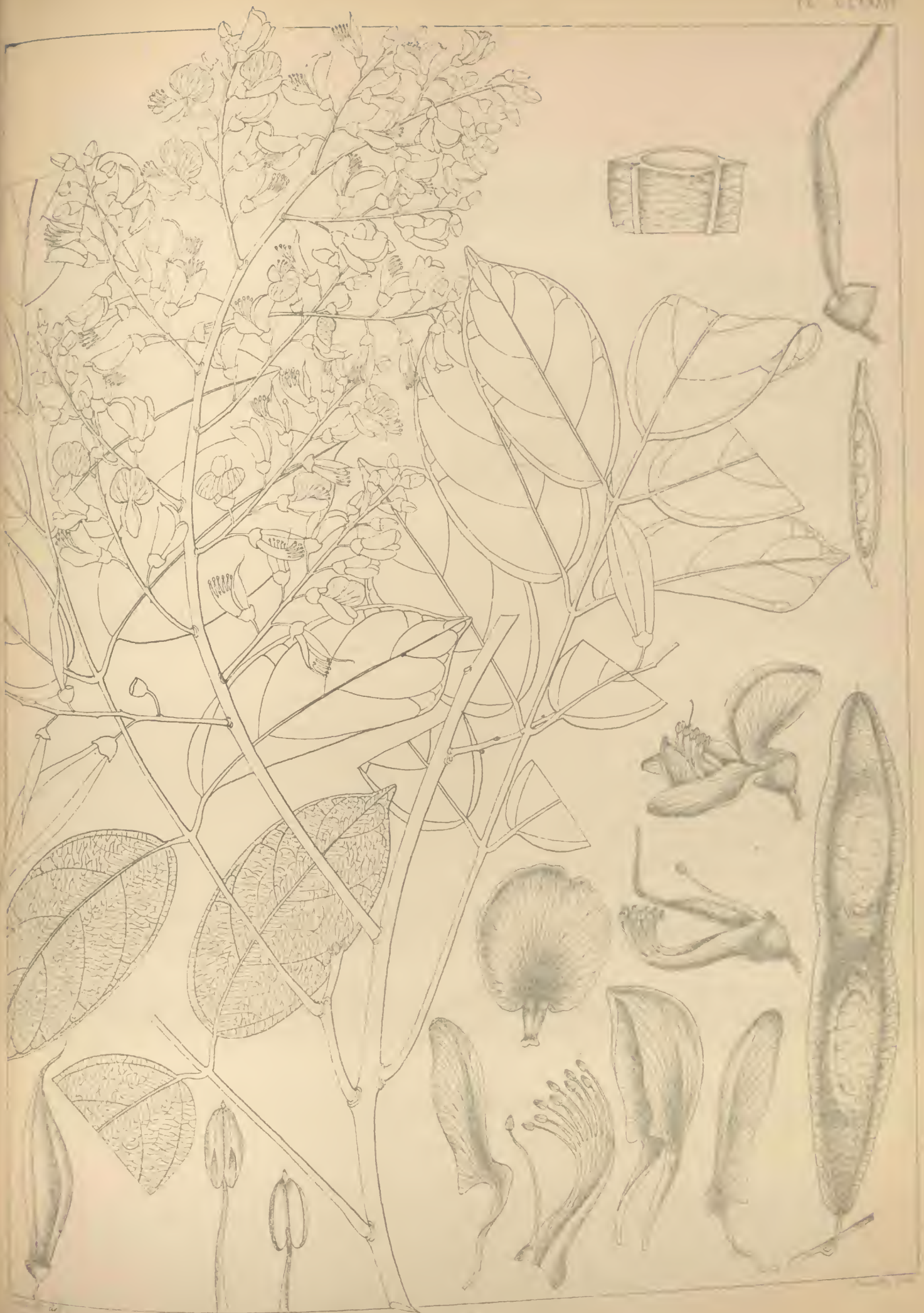
Croton Malabaricus



Lagerstroemia nemoralis Thw.

Endostemon Haldwicianus Blatt

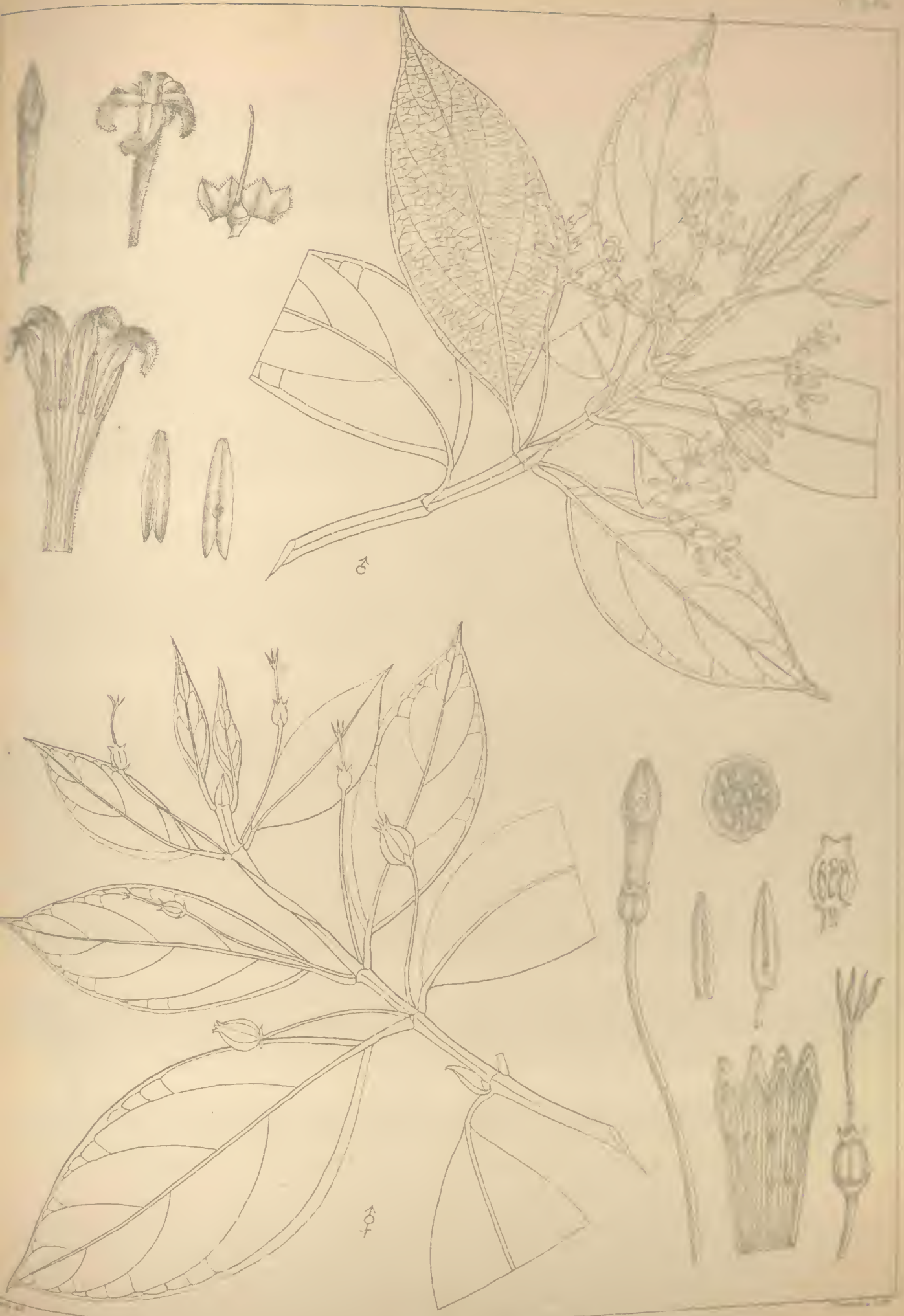
Hoya Hookeriana Wall.



Tonecarpus auriculata, Bald.

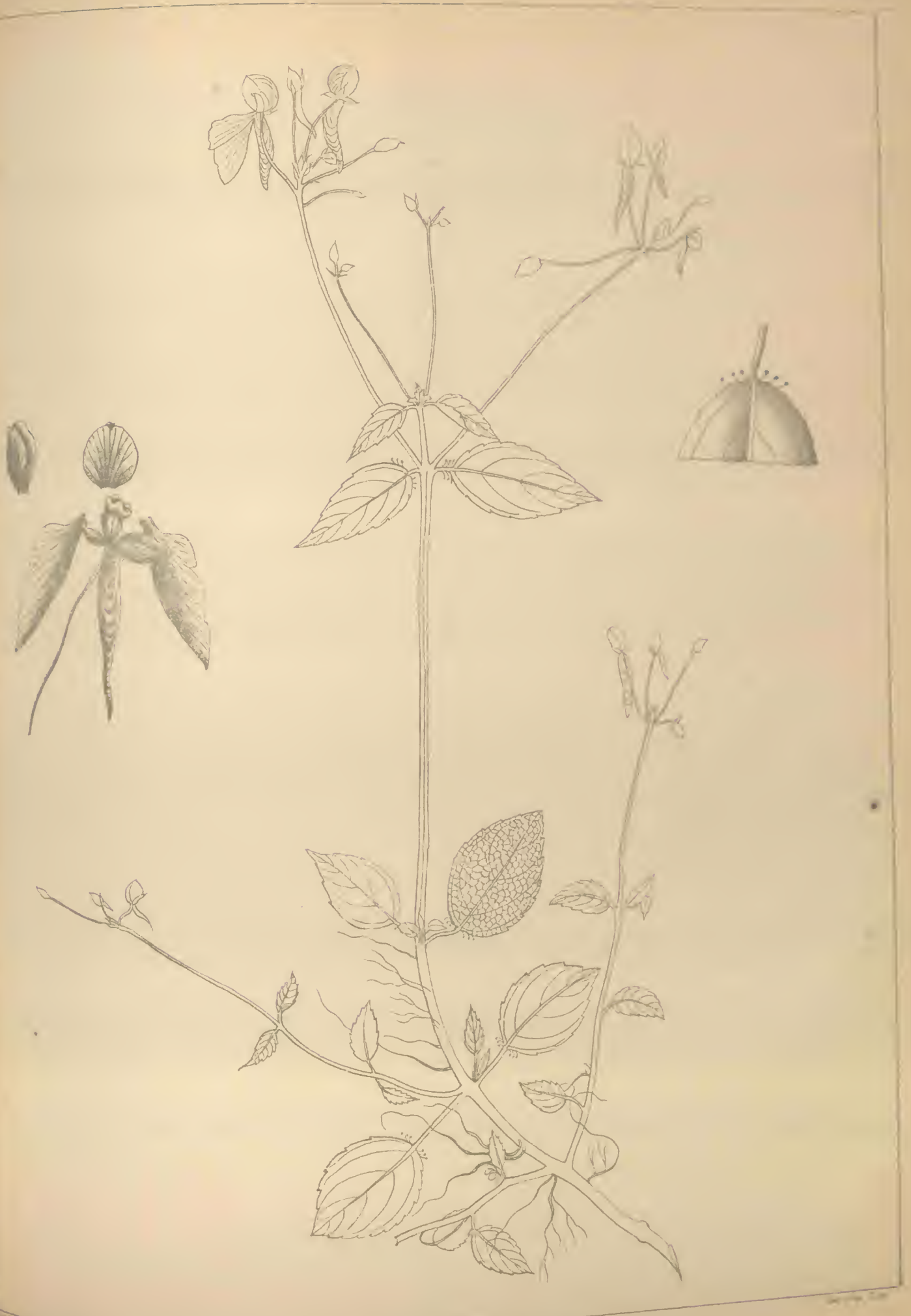
Colubrina? Travancorica, Bedd.

Parinarium Javanicum Hook.

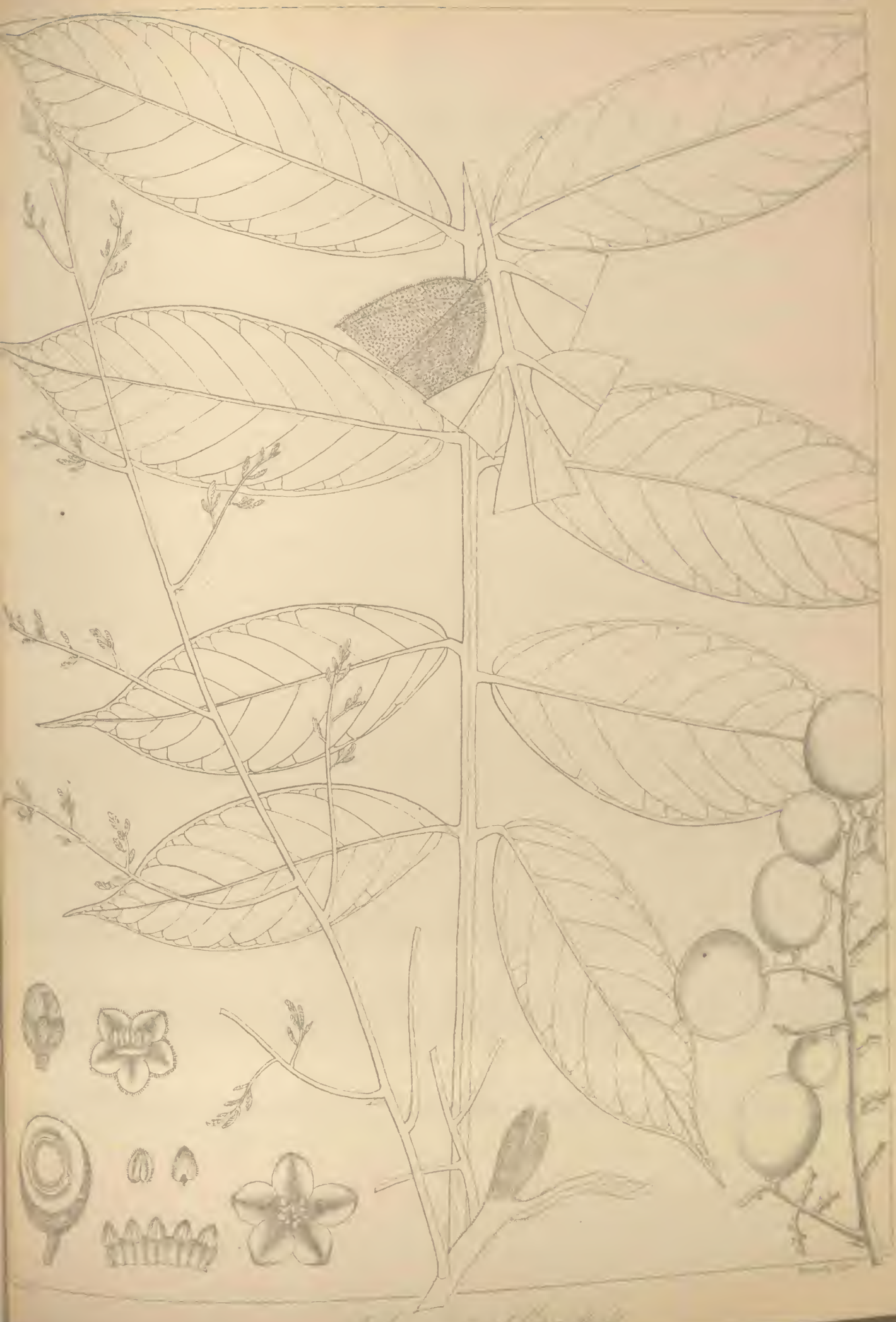


Jumonia parviceps Gleas.

Hedyotis capsularis (Roxb.)



Impatiens Balfourii Hook.f.



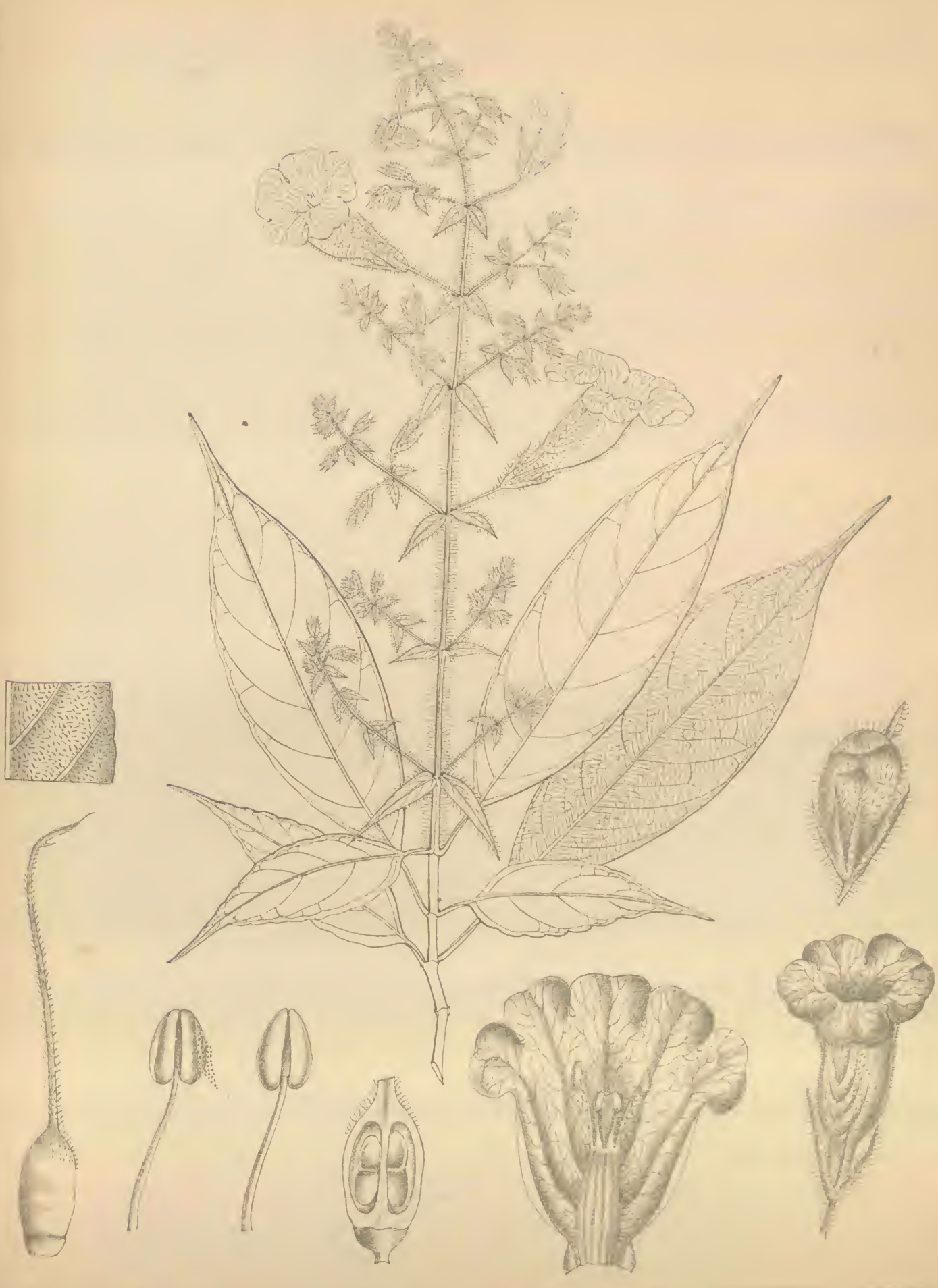
Hevea Guadeloupensis

Enuthrostemum bhutanicum

Strobilanthes sulcatus Nees

Impatiens Balsamina Linn.

Strobilanthes gossypinus (Anders.)



Strobilanthes paniculatus Nees

Strobilanthes Rolampatanus Wight